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Tallahassee-Leon County Wastewater Management, Tallahassee, Leon County, Florida

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Atlanta, GA

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Region 4
345 Courtland Street, NE
Atlanta, GA 30365

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March 1983

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EPA

Environmental Impact Statement

Final

Tallahassee-Leon County Wastewater Management Tallahassee, Leon County Florida

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Atlanta, GA 30365

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Environmental Impact Statement (EIS)

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FINAL

14.

15. Supplementary Notes

16. Abstract (Limit: 200 words)

This Final EIS has addressed the Federal Action of the Provision of Federal Funds for Phase II wastewater facilities as proposed by the Draft 201 Facilities plan for Tallahassee-Leon County. The Phase II wastewater facilities were proposed for growth areas which will not be served by 201 facilities already approved for Federal funding. Alternatives for wastewater management in the study area were developed and evaluated with emphasis on protection of the groundwater resources and sensitive natural systems such as floodplains and wetlands. The selected action for the Final EIS is that no further Federal grants be made for expansion of the wastewater system beyond that already approved under Phase I of the 201 Plan. The basis of this decision is the determination that the Phase I facilities already approved by EPA will serve all existing and some future needs, and that new growth in wastewater generation can be handled in an environmentally sound and cost effective manner by on-site and small community systems.

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Federal Funds
on-site

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c. COSATI Field/Group

18. Availability Statement	19. Security Class (This Report)	21. No. of Pages
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV
345 COURTLAND STREET
ATLANTA, GEORGIA 30365

MAR 18 1983

TO ALL INTERESTED AGENCIES, PUBLIC GROUPS, AND CITIZENS:

Enclosed for your review and comment is the Final Environmental Impact Statement (EIS) for wastewater management in the Tallahassee-Leon County, Florida area.

This EIS was prepared in compliance with the National Environmental Policy Act and implementing Agency regulations (40 CFR Part 6, November 6, 1979). In accordance with these regulations, the Final EIS will be filed with EPA's Office of Federal Activities. Availability of the EIS will then be announced in the Federal Register, beginning a 30-day comment period. (The Federal Register date is the same as the date of this notice). This Agency will take no administrative action on this project until the close of the comment period.

We will appreciate your review of this document and any comments you may have. Please send all comments to E.T. Heinen, Chief, Environmental Assessment Branch at the above address.

Final

Environmental Impact Statement

Tallahassee-Leon County Wastewater Management

Tallahassee, Leon County, Florida

U.S. Environmental Protection Agency
Region IV
Atlanta, Georgia 30365

This Final EIS has addressed the Federal Action of the provision of Federal Funds for Phase II wastewater facilities as proposed by the Draft 201 Facilities Plan for Tallahassee-Leon County. The Phase II wastewater facilities were proposed for growth areas which will not be served by 201 facilities already approved for Federal funding. Alternatives for wastewater management in the study area were developed and evaluated with emphasis on protection of the groundwater resources and sensitive natural systems such as floodplains and wetlands.

The selected action for the Final EIS is that no further Federal grants be made for expansion of the wastewater system beyond that already approved under Phase I of the 201 Plan. The basis of this decision is the determination that the Phase I facilities already approved by EPA will serve all existing and some future needs, and that new growth in wastewater generation can be handled in an environmentally sound and cost effective manner by on-site and small community systems.

Comments or inquiries should be forwarded to:

E.T. Heinen, Chief
Environmental Assessment Branch
Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30365
404/881-3776

Approved By:

Charles R. Jeter
Charles R. Jeter
Regional Administrator

January 12, 1983
Date

EXECUTIVE SUMMARY FOR ENVIRONMENTAL IMPACT STATEMENT

TALLAHASSEE-LEON COUNTY WASTEWATER MANAGEMENT

TALLAHASSEE-LEON COUNTY, FLORIDA

Draft ( )

Final (X)

Environmental Protection Agency
Region IV
345 Courtland Street
Atlanta, Georgia 30365

Type of Action:

Administrative Action (X)
Legislative Action ( )

EXECUTIVE SUMMARY

PART A. DESCRIPTION OF RECOMMENDED ACTION

This EIS has addressed the Federal Action of the provision of Federal funds for Phase II wastewater facilities as proposed by the Draft 201 Facilities Plan for Tallahassee-Leon County. The selected action for the Final EIS is that no further Federal grants be made for expansion of the wastewater system beyond that already approved under Phase I of the 201 Plan. The basis of this decision is the determination that the Phase I facilities already approved by EPA will serve all existing and some future needs, and that new growth in wastewater generation can be handled in an environmentally sound and cost effective manner by on-site and small community systems.

The EIS projected that by the year 2000, the wastewater flow from within that area now served by the City, without flow reduction measures, will approximate the available 17.5-mgd capacity at the T. P. Smith/Southwest treatment facility.

Data on soils in the growth area support the use of on-site systems. The Leon County Health Department indicates that on-site systems operate properly when their construction follows the basic rules governing their placement. The few failures of on-site systems that have occurred in the northeast growth area are a result of poor siting and poor construction.

The importance of groundwater quality in an area where groundwater is the sole potable water supply is a most critical consideration. The EIS shows no significant adverse impact to groundwater quality from the use of on-site systems and small community systems in the growth areas. The potential impacts on down-gradient city water supply wells were fully considered in the selection of Alternative 4. The geological formations in northern Leon County, including the projected growth areas, should provide adequate protection for the drinking water (Floridan) aquifer.

Another issue investigated by the EIS was the potential detrimental impacts to wetlands resulting from development in northeast Leon County. Properly implemented, the recommended alternative decreases the potential for development of marginal lands and environmentally sensitive lands such as wetlands, floodplains, and high groundwater areas.

For the implementation of Alternative 4, the importance of proper siting, construction, and operation and maintenance of on-site and small community systems cannot be overemphasized. If these systems are used extensively and are poorly maintained, the potential for adverse environmental impacts increases. These impacts include the potential for human contact with wastewater surfacing from poorly located or designed drainfields and resulting health effects. Managed competently, however, on-site systems and small community systems are effective and environmentally sound. It is recommended that the implementation of Alternative 4 include several measures at the local level which will serve to mitigate potential impacts. The primary recommendations are the following:

1. Revision of basic rules governing septic tank use to allow for systems more suited to current and future demands. These revisions should address siting criteria, basic system design, and the use of alternative systems.

2. The implementation of a management district or other means of on-site systems management to promote efficient operation.

3. Monitoring of groundwater quality in developing areas of Leon County to ensure early detection and correction of contamination of groundwater resources. The focus of this program would be to identify cumulative areawide impacts on groundwater.

PART B. SUMMARY OF ALTERNATIVES CONSIDERED

Four comprehensive alternatives were developed for the Tallahassee-Leon County area. Each of these alternatives incorporates complete wastewater management systems for the area. The available collection, treatment and disposal options for wastewater management were screened under the EIS, and the feasible options for the study were determined.

In developing and evaluating the alternative systems, the following were considered:

1. The EIS wastewater flow projection for the planning period (through the year 2000) is 22.3 mgd without conservation measures. The 201 Plan-projected flow for the year 2000 is 30.4 mgd.

2. The EIS identifies three major wastewater - generation areas: the southwest, the northeast, and the southeast. The alternatives have been developed for serving these three areas.

3. The evaluation of conservation measures for the EIS study showed that a flow reduction of 2.4 mgd by the year 2000 is feasible. The costs and structural configurations of each alternative are described with and without conservation.

4. The only wastewater disposal options evaluated in detail were land application options. Surface water discharges and other options were eliminated as inappropriate, for cost, environmental or technical reasons.

5. Florida DER rules require secondary treatment prior to application of effluent to the land. EPA decisions regarding funding of pre-application levels of treatment prior to land application are determined on a case by case basis.

6. The Dale Mabry treatment plant will be closed.

The alternative wastewater management systems developed and evaluated for the study area are described as follows:

1. Alternative System 1A

   A new treatment plant would be constructed in the northeast, and the T. P. Smith/Southwest treatment facility would be expanded beyond the Phase I capacity of 17.5 mgd. A northeast treatment plant would provide service in the northeastern growth areas of Leon County. In addition, sewers would be extended to developed portions of the northeast presently served by on-site and small community systems. The expanded T. P. Smith/Southwest Plant would serve the Southwest and Southeast service areas. Effluent from the T. P. Smith/Southwest plant would be disposed of at the expanded Southeast Sprayfield. The Northeast plant effluent would be disposed of by rapid infiltration at a northeast disposal site.

2. Alternative System 1B

   This alternative is the same as 1A except that the treated effluent from the Northeast plant would be conveyed to the expanded Southeast Sprayfield for disposal.

3. Alternative System 2

   For this alternative, existing facilities serve as a regional treatment system. The structural configuration depends on the decision whether or not to implement conservation measures. Without conservation measures, the most cost-effective system is continued operation of the Lake Bradford plant at 4.5 mgd and expansion of the T. P. Smith/Southwest plant by 0.3 mgd. With conservation measures, an expanded T. P. Smith/Southwest treatment facility would serve the entire sewered area as a regional treatment plant with a 19.9-mgd capacity. This alternative includes extensive construction of interceptors to serve the Northeastern and eastern portions of the 201 planning area.

4. Alternative System 3

   Under this alternative, a Southeast treatment plant would be constructed to supplement the treatment capacity of the expanded T. P. Smith/Southwest facility. The Southeast plant would serve growth areas in the Southeast and Northeast. The T. P. Smith/Southwest plant would serve projected growth areas in the Southwest and the existing service area. For both plants, wastewater would be disposed of at the Southeast Sprayfield.

5. Alternative System 4 (No-Federal-Action Alternative)

   The No-Federal-Action Alternative is described by considering the present situation in the Tallahassee-Leon County area and projecting future conditions with no changes in public policy or private practices. Expansion of the present wastewater system would continue only until the limits of Phase I expansion are reached. New growth in wastewater generation would be handled by on-site and small community systems. Population infilling would take place in the City's service area and some additional collectors would be necessary.

Each alternative was evaluated with respect to cost, environmental impacts, technical feasibility, and implementability. A summary of the evaluation of alternatives is presented in Table 1.

TABLE I
SUMMARY OF ALTERNATIVES EVALUATION

Alternatives	Description of Alternatives	Total Present Worth ($x10)	Impacts
1A	T.P. Smith/SW plants to serve SW & SE with disposal at SE spray field. NE plant to serve NE with disposal in NE	$38.4 (29.4)*	1. Development flexibility in density and location 2. 24.3 million greather than lowest cost alternative 3. Cost to homeowners from tap-on fees and sewer use fees. 4. Construction impacts on surface waters and plant and animal resources 5. NE plant considered incompatible with existing land uses by area residents 6. City's drinking water wells down gradient of proposed rapid infiltration site 7. Increased potential for nonpoint source pollution due to increased impervious surfaces from higher density development and opportunity to develop flood plains, wetlands and high groundwater areas.
1B	Same as 1 above except NE plant effluent disposal at SE sprayfield	$52.7 (46.0)*	1. Development flexibility in density and location 2. Highest cost structural alternative 3. Less impact on groundwater than 1A 4. Cost to homeowner from tap-on fees and sewer use fees 5. Alternative most desired by the City 6. Construction impacts on surface water, and plant and animal resources 7. Increased potential for non-point source pollution due to increased impervious surfaces from higher density development and opportunity to develop floodplains, wetlands and high groundwater areas 8. Added construction impacts from transmission line to SE sprayfield
2	T.P. Smith/SW plants & Lake Bradford plant, if needed, serve as regional plants with disposal at SE sprayfield	$31.5 (27.6)*	1. Development flexibility in density and location 2. Cost to homeowner from tap-on fees and sewer use fees 3. 21.1 million greater than lowest cost alternative 4. Construction impacts on surface water and plant and animal resources 5. Maximum use of existing facilities 6. Increased potential for nonpoint source pollution due to increased impervious surfaces from higher density development and opportunity to develop floodplains, wetlands and high groundwater areas. 7. Makes full use of alreadv constructed force main to SE sprayfield 8. Long interceptors potentially causing anaerobic conditions and treatment problems
3	T.P. Smith/SW plants to serve SW and SE. NE served by SE plant. All disposal at SE sprayfield.	$40.0 (34.3)*	1. Development flexibility in density and location 2. 29.6 million greater than lowest cost alternative 3. Avoids public acceptance problems of NE plant 4. Cost to homeowner from tap-on fees and sewer use fees 5. Construction impacts on surface water, and plant and animal resources 6. Increased potential for nonpoint source pollution due to increased impervious surfaces from higher density development and opportunity to develop floodplains, wetlands, and high groundwater areas 7. Long interceptors causing anaerobic conditions and treatment problems
4	T.P. Smith/SW plants to serve existing city service area. Growth areas outside service area served by on-site of small community systems	$10.4** (5.98)*	1. Does not promote development of marginal lands (floodplains, wetlands, high groundwater areas) 2. Lowest Cost 3. Most implementable 4. Decentralized systems potentially more difficult to operate and maintain 5. Least concentrated impact on groundwater 6. Higher potential for human contact and health effects with on-lot systems under malfunction conditions 7. Least impact on streets and yards in areas now served by on-lot systems and on plant and animal communities due to reduced pipeline construction 8. Small community systems with evapor.-perk ponds present potential impact to groundwater 9. Reduced energy use.

* Cost if flow reduction measures are implemented.
** Includes costs for on-lot systems.

PART C. DRAFT EIS COMMENTS

Comments on the Draft Statement were received from the following:

Federal Agencies

U.S. Army Corps of Engineers, Environment and Resources Branch
U.S. Department of Agriculture, Soil Conservation Service
U.S. Department of Health and Human Services, Environmental Health Services Division
U.S. Department of Housing and Urban Development
U.S. Department of the Air Force, Environmental Planning Division
U.S. Department of the Interior, Fish and Wildlife Service

State Government

Florida Department of Environmental Regulation, Bureau of Wastewater Management and Grants, and Drinking Water Program

Local Government

City of Tallahassee
- Mayor (Hurley W. Rudd)
- 201 Program
- Tallahassee Water Quality Lab

Leon County Board of County Commissioners
Leon County Health Department

Interested Groups

Munson Area Preservation, Inc.
Tallahassee Board of Architects and Engineers
William M. Baldwin, P.E.
Tallahassee-Builders

Other

Falls Chase Special Taxing District

FINAL ENVIRONMENTAL IMPACT STATEMENT

TALLAHASSEE - LEON COUNTY

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I. INTRODUCTION

This Final Environmental Impact Statement (FEIS) for Wastewater Management in the City of Tallahassee and Leon County, Florida supplements the Draft EIS issued in September 1981. The EIS has been prepared in accordance with the Council on Environmental Quality (CEQ) Guidelines and EPA Guidelines for the preparation of Environmental Impact Statements. This EIS is also in response to the requirements of Public Law 91-190, the National Environmental Policy Act of 1969, which requires the preparation of an EIS for any major Federal action that will significantly affect the quality of the environment. While this summary document is intended to be comprehensive, the supporting information furnished with the Draft EIS should be reviewed and is incorporated here by reference. It is to be noted that this Final EIS supercedes the Draft EIS wherever conflicts between the two exist.

The Final EIS contains eight major sections. Section II, Recommended Action, describes in detail the recommended action and evaluation process that led to its selection. Section III presents a summary of the Draft EIS, including a review of each Chapter in the Draft EIS and major findings and recommendations. Section IV presents any revisions and additional information gathered after issuance of the Draft EIS in September 1981. EPA's responses to comments received on the Draft EIS are tabulated in Section V. The written comments, and the oral comments received at the Public Hearing are indexed in this section. Section V also contains the transcript of the Draft EIS Public Hearing held on November 5, 1981. A coordination list is presented in Section VI and a list of preparers is presented in Section VII.

II. RECOMMENDED ACTION

PART A. INTRODUCTION

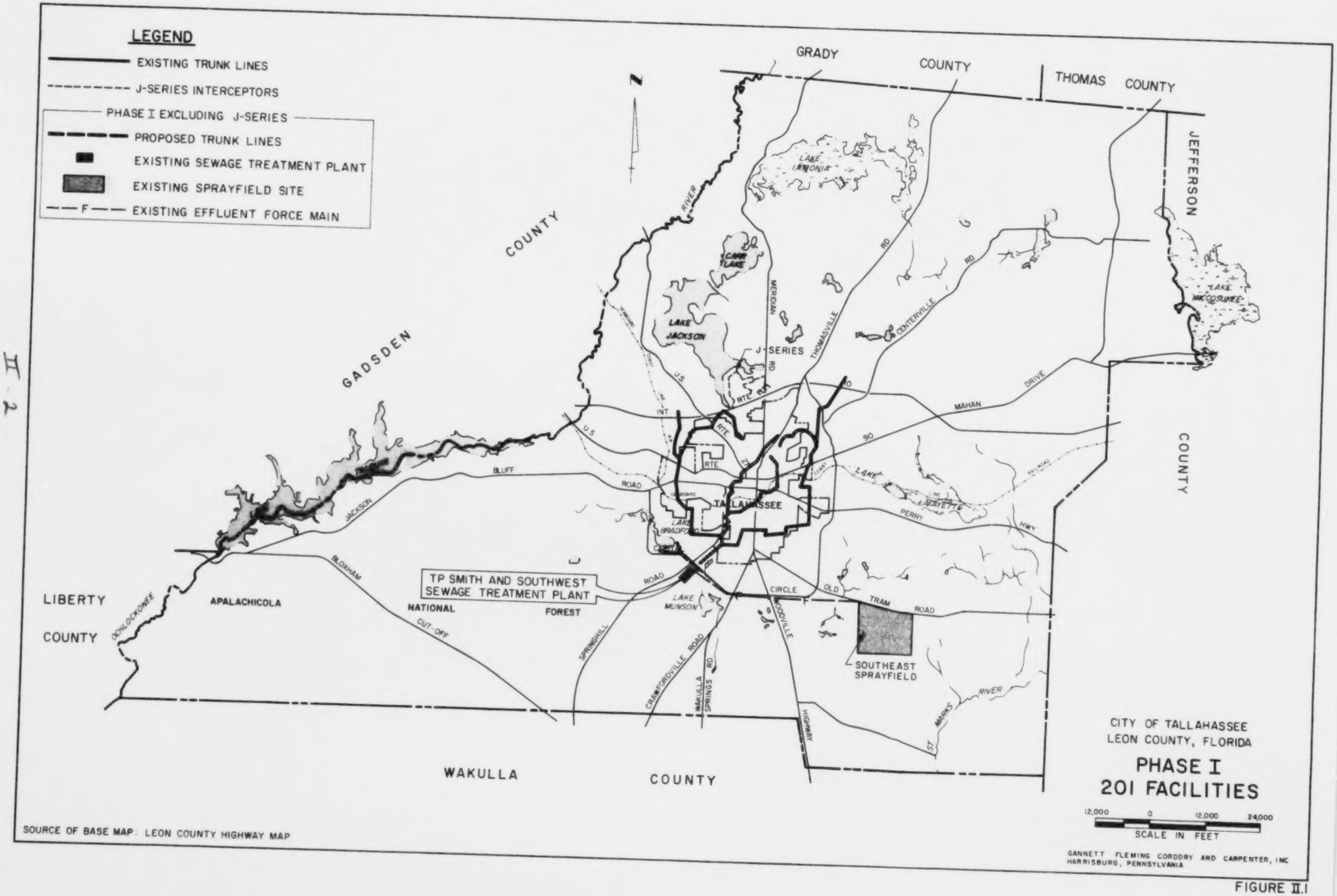
This EIS has addressed the Federal Action of the provision of Federal funds for Phase II wastewater facilities as proposed by the Draft 201 Facilities Plan for Tallahassee-Leon County. The selected action for the Final EIS is that no further Federal grants be made for expansion of the wastewater system beyond that already approved under Phase I of the 201 Plan. The basis for this decision is the determination that the Phase I facilities already approved by EPA will serve all existing and some future needs, and that new growth in wastewater generation can be handled in an environmentally sound and cost effective manner by on-site and small community systems.

PART B. SELECTION OF THE RECOMMENDED ACTION

No additional centralized treatment capacity is recommended for construction. Areas within the existing City service area can be served by 201 Plan Phase I construction: expansion of T.P. Smith/Southwest facility to 17.5 mgd, expansion of Southeast sprayfield to 17.5 mgd, and construction of new 17.5 mgd sludge handling facilities. It is projected by the year 2000 the wastewater flow within the area presently served by the City will approximate 17.5 mgd, without considering flow reduction measures. It is expected that infilling will occur within the existing City service area and that some additional collectors are likely to be constructed by the City in order to serve this infilling population. No additional interceptor sewers are recommended. Facilities already approved by EPA, known as Phase I of the 201 Plan Facilities are eligible for funding and most them have already been funded. Phase I includes several lines in the southwest which will connect the Municipal Airport treatment plant to the T.P. Smith plant. Phase I facilities are shown in Figure II.1.

Phase I also included interceptor sewers (J-Series) for the Miginnis Arm area of Lake Jackson. However, these lines were later added to the proposed facilities to be studied by the EIS. This area is not recommended for conventional sewers as proposed in the 201 plan. Alternative wastewater facilities such as improved on-lot or small community systems, have been found to be cost effective and environmentally sound.

One of the issues which resulted in the preparation of the EIS is that wastewater flow projections in the 201 plan were found to be excessive. The 201 Plan projects a wastewater flow of 30.4 mgd by the year 2000. The EIS projects a wastewater flow of 22.3 mgd by the year 2000 for the study area, a difference of 8.1 mgd. Further, should flow reduction measures be utilized, the year 2000 flow would be 19.9 mgd, a difference of 10.5 mgd.


LEGEND
EXISTING TRUNK LINES
J-SERIES INTERCEPTORS
PHASE I EXCLUDING J-SERIES
PROPOSED TRUNK LINES
EXISTING SEWAGE TREATMENT PLANT
EXISTING SPRAYFIELD SITE
F EXISTING EFFLUENT FORCE MAIN
GRADY COUNTY
THOMAS COUNTY
JEFFERSON COUNTY
GADSDEN COUNTY
LIBERTY COUNTY
WAKULLA COUNTY
N
LAKE IAMONIA
LAKE MICCOSUKEE
CARR LAKE
LAKE JACKSON
J-SERIES
TALLAHASSEE
LAKE BRADFORD
LAKE MUNSON
TP SMITH AND SOUTHWEST SEWAGE TREATMENT PLANT
SOUTHEAST SPRAYFIELD
APALACHICOLA NATIONAL FOREST
OCHLOCKONEE RIVER
ST. MARKS RIVER
LAKE LAFAYETTE
MERIDIAN RD
THOMASVILLE RD
CENTERVILLE RD
MAHAN DRIVE
PERRY HWY
OLD TRAM ROAD
CIRCLE
WOODVILLE HIGHWAY
WAKULLA SPRINGS RD
CRAWFORDVILLE ROAD
SPRINGHILL ROAD
BLOXHAM CUT-OFF
JACKSON BLUFF ROAD
U.S. RTE 90
U.S. RTE 27
INT 10
SEABOARD COAST LINE RAILROAD
12,000 0 12,000 24,000
SCALE IN FEET

CITY OF TALLAHASSEE
LEON COUNTY, FLORIDA

PHASE I
201 FACILITIES

SOURCE OF BASE MAP: LEON COUNTY HIGHWAY MAP

GANNETT FLEMING CORDDRY AND CARPENTER, INC
HARRISBURG, PENNSYLVANIA

FIGURE II.1

The 4.8 mgd of flow (without flow reduction measures) above the 17.5 mgd capacity of the T.P. Smith/Southwest facility is projected to be generated mainly in the northeast and eastern portions of the study area. The EIS has shown these areas to be mostly suitable for the use of on-site and small community systems. This determination of suitability is based on soil types and groundwater conditions.

Data on soils in the growth area support the use of on-site systems. The Leon County Health Department indicates that on-site systems operate properly when their construction follows the basic rules governing their placement. The few failures of on-site systems have occurred in the northeast growth area are a result of poor siting and poor construction. This is confirmed by personal communication with septic tank installers in the area. In addition, a recent study conducted in Leon County, Florida, to develop soil potential ratings for septic tank absorption fields rated most of the soils in the growth areas as having medium to very high potential for septic tank installation.

Future use of on-site systems in the eastern and northeastern areas of Tallahassee should be fully acceptable. The few future problems with on-site systems will predominantly be institutional problems in that pressure will be placed by developers for less stringent rules governing on-site placement and siting, and existing rules may not be followed. Most of those contacted concerning potential septic tank problems said that one of the most important future needs with respect to septic tank use is a modification of the rules to address problems associated with the increased use of garbage disposals and washing machines.

The EIS assessed the needs of the Meginnis Arm area near Lake Jackson in detail. It was found that the area included some malfunctioning on-lot systems. The soils in the area are generally suitable for on-lot systems. On-lot and small community systems were found to be the most cost-effective wastewater systems for this and other areas of low density development. Also, it should be noted that only a small percentage of this area would be eligible for Federal funding of conventional sewers.

Another issue of the EIS is that the potential for future development in Leon County is in the Northeast part of the County. Concern was expressed that this development would have adverse impacts on wetlands and streams in this area. The recommended alternative will result in decreasing the potential for nonpoint source pollution. In addition, the recent implementation of the Leon County Stormwater Management Ordinance will help to mitigate the impacts on surface water quality. Also, the impacts on wetlands and streams from the construction of interceptors, which would require ten stream crossings, would be avoided.

The importance of groundwater quality in an area where groundwater is the sole potable water supply is a most critical consideration. The EIS shows no significant potential adverse impact to groundwater quality from the use of on-site systems and small community sewers in the growth areas.

The use of septic tanks and community systems for the growth areas and their impact on the down-gradient City water supply wells are fully considered in making this recommendation. The geological formations in northern Leon County, including the projected growth areas, provide adequate protection for the drinking water (Floridan) aquifer. The Floridan Aquifer in this area is covered by several hundred feet of soil and the Hawthorne Formation, which is a confining layer. The City's wells range in depth from 294 to over 400 feet.

Operation and maintenance problems as well as siting and construction inadequacies have been the cause of the few failures of on-site systems in the growth areas. These are considered to be institutional problems that can be overcome. In addition, the use of small evaporation/percolation ponds, is considered to have minimal potential for adverse impacts to groundwater when operated properly and in conjunction with groundwater monitoring.

Some aspects of the recommended plan may be eligible for federal funding. They include the following:

1. The construction of on-site and small community systems as innovative and alternative technologies incumbent on the implementation of a public management agency, such as is described in this document.

2. The facilities for the treatment and disposal of the septage and sludge from on-site and small community systems incumbent on the implementation of a public management agency, such as described in this document.

PART C. MITIGATIVE MEASURES

The success of the recommended action is chiefly dependent on obtaining effective treatment from a large number of small systems. In the development of specific mitigative measures it is important to consider the potential causes of and the appropriate corrective actions in response to on-site and small community system failures.

For this purpose two commonly used systems, one on-site and one small community, were investigated. A septic tank followed by a soil absorption field is a typical on-site treatment disposal system. The septic tank removes nearly all settleable solids and floatable grease and scum. This partially treated wastewater is applied to the soil absorption field where it is absorbed and treated by the soil as it percolates. Travel through two to four feet of unsaturated soil will provide adequate removals of pathogenic organisms and other pollutants from the wastewater. A commonly used small community system, especially in areas where surface water discharge is not likely to be permitted, is an extended aeration treatment system with disposal to an evaporation-percolation pond. Extended aeration is a biological treatment process which removes substantial amounts of BOD and suspended solids that are not removed by simple sedimentation. Evaporation-percolation ponds utilize the natural energy of the sun and the natural purification capabilities of soil to dispose of the treated effluent.

Both of these systems can be effective and environmentally sound with proper siting, design, installation, operation and maintenance. When failures do occur they usually fall into a few general categories. Tables II.1 and II.2 contain, for each system, an identification of the types of failures which may occur, the environmental impacts of these failures, the possible causes for these failures, and the corrective actions which would be necessary to rehabilitate the system. In addition, measures are identified which would mitigate the impacts of these failures.

The primary goals of the mitigative measures identified in Tables II.1 and II.2 are to prevent, or lessen the chances of, the occurrence of a failure and to increase the chances of early detection and correction of any failures that do occur. The mitigative measures listed can be summarized by three principal recommendations:

1. Revision of basic rules governing septic tank use to allow for systems more suited to current and future demands. These revisions should include siting criteria, basic system design, and the use of alternative systems.

2. Monitoring of groundwater quality in the developing areas of Leon County.

3. The implementation of a management district or other means of on-site and small community systems management.

1. Regulations

Current regulations controlling the siting and design of septic systems make it difficult to implement sufficient site or design modification to compensate for less than optimum conditions. State regulations do not allow installation of an on-site system where percolation rates exceed 15 minutes per inch. Percolation rates as slow as 60 minutes per inch have been shown to be effective because such percolation rates can be compensated for with lower loading rates. In addition, allowances for a slower percolation rate are recommended to help protect groundwater from contamination and allow for site and design modifications that are more flexible. Soils with high percolation rates may not properly renovate the wastewater in standard septic systems.

TABLE II.1

FAILURES AND MITIGATIVE MEASURES
SEPTIC TANK -- SOIL ABSORPTION FIELD SYSTEM

Type of Failure	Environmental Impacts	Possible Causes	Mitigative Measures	Corrective Actions
Overloaded absorption field; septic tank effluent breaks through ground surface	. Potential for surface water degradation from runoff . Odors . Potential for human contact and health effects	. Field initially designed too small . Substantial increase in water usage . Clogging by bacterial mats and sludge; insufficient solids removal by septic tank or septic tank not being pumped as needed . Improper method of drainfield installation . Unsuitable soil conditions or site characteristics . Water table higher than anticipated due to ungradient development	. Implementation of a management agency which would be responsible for: -Proper siting, design and installation of systems -An inspection and preventive maintenance program -Providing prompt attention to problems . Revision of regulations to allow greater site and design flexibility	. Increase absorbtion . Flow reduction measures . Eliminate clear water discharges . Oxidize clogging mat; pump out and repair or replace septic tank . More frequent maintenance . Dosing . Modification of site or system: regrading/filling/alternate system
Insufficient renovation by soil absorption field	. Transmission of minerals, nutrients, bacteria or viruses to groundwater	. Unsuitable soil conditions or characteristics; poorly structured, too rapidly permeable soils provide insufficient renovation . Unsuitable site; high groundwater, or geological characteristics provide direct path to groundwater	. Implementation of management agency as described above . Groundwater monitoring to increase chances of early detection . Revision of regulations to allow greater site and design flexibility	. Modification of site or system: filling/alternate system . Intercept flow to groundwater by subsurface drainage

TABLE II.2

FAILURES AND MITIGATIVE MEASURES
EXTENDED AERATION -- EVAPORATION-PERCOLATION POND SYSTEM

Type of Failure	Environmental Impacts	Possible Causes	Mitigative Measures	Corrective Actions
Mechanical failure; reduction of treatment efficiency	. Odor . Potential for human contact and health effects from effluent in ponds	. Blower or mechanical aerator failure . Pump and pipe clogging . Electrical motor failure . Corrosion and/or failure of controls . Electical malfunctions	. Installation of alarm system . Implementation of management agency which would be responsible for: -Proper siting, design and installation of systems -An inspection and preventive maintenance program -Stockpiling parts -Providing prompt attention to problems	. Repair or replacement of malfunctioning parts
Hydraulic overload of treatment system; reduction of treatment efficiency	. Odor . Potential for human contact and health effects from effluent in ponds	. Heavy rainfall; problem could he magnified by infiltration problems . Treatment system undersized . Sludge not removed regularly	. Conservative design . Installation of alarm system . Implementation of management agency as described above	. Correct infiltration problems . Expansion or modification of treatment system . More frequent maintenance
Hydraulic overload of disposal system	. Potential for surface water degradation from runoff	. Clogging of percolation surface . Heavy rainfall . Pond undersized	. Conservative design; storage volume for wet periods . System designed with dual ponds or chambered single pond; periodic resting included in maintenance program . Pond designed with well-vegetated, steep walls to prevent channels from developing through the walls . Implementation of management agency as described above	. Rejuvenation of percolation surface . Expansion or modification of disposal system
Insufficient percolation time from ponds	. Potential for a build-up of minerals and nutrients in groundwater	. Unsuitable soils or site characteristics	. Implementation of management agency as described above . Modify site or soils to ensure sufficient percolation prior to installation . Groundwater monitoring to ensure early detection	. Drain pond and modify infiltrative surface to ensure sufficient percolation

Design flexibility to fit the septic system to site conditions would allow creative solutions to specific problems. Presently, soil absorption beds are sized on the number of bedrooms in the residential home instead of the ability of the soil to absorb septic tank effluent. With siting and design flexibility, installation that would not have worked on a particular site can be avoided. Design flexibility would also allow the use of alternative systems such as pressure dousing and split bed application.

Additional flexibility for site selection can be obtained by the U.S.D.A. Soil Texture Classification instead of the United Classification system in regulations. The United Classification system arranges soil types in large groups which tend to include soils that can be useful for wastewater renovation with those that are of limited use. In contrast, the U.S.D.A. Soil Texture Classification System identifies the soils in more detail and allows better use of soil types.

2. Groundwater Monitoring

Groundwater quality monitoring in developing areas of Leon County, where on-site or small community systems will be used, should begin before each subdivision is started. This will allow background information to be developed as well as the identification of the effects on groundwater from construction activity. Continual monitoring throughout the construction and life of the development will ensure that changes in groundwater quality are quickly detected. With the location of monitoring wells up and down gradient of the groundwater movement and within the development area, the impact to groundwater resources can be detected. Should adverse conditions appear to be developing, corrective actions, such as those shown in Tables II.1 and II.2 can be taken.

3. Management District

Poor operation and maintenance of on-site and small community systems is one cause leading to their failure. Public management of these systems is a possible means of ensuring that improper operation and maintenance does not contribute to system failure. Although poor operation and maintenance is recognized as one cause of septic system failure, regulatory agencies generally do not set standards or specific requirements to ensure proper operation and maintenance. In general, the regulations are applicable to the design and construction of septic systems but leave the operation and maintenance responsibility to homeowners.

Enforcement officials as well as researchers have identified enforcement problems as the weak link that leads to ineffective management and malfunctioning systems. Such problems include the following:

1. Many agencies lack time and resources to control on-site and small systems adequately.

2. Local authorities usually depend on the integrity and ability of soil testers and contractors to evaluate site and to design and install systems.

3. Local authorities are sometimes pressured into approving the construction of septic systems on poor or marginal soils.

To overcome these problems, a number of communities have opted for public management of on-site and small community systems. Public entities must have the authority to control these systems. Essential controls and the authority to enforce them are:

Control Element	Authority Needed
Siting and Design	To enter property and do in-depth site evaluations.
Installation	To set design standards, design systems, and review designs.
Operation and Maintenance	To enter property to inspect and ensure proper operation and maintenance.
Problem Correction	To require and enforce repair or replacement of failing systems.

A public management agency can also be responsible for implementing certain measures which would further reduce the chance of failure of on-site systems:

1. Initiate a project to analyze the causes of failure based on historical data and analyze each new failure reported. Identify trends in local as well as area-wide causes for failure. Use this information to anticipate future problems and respond with preventive maintenance activities in high risk neighborhoods.

2. Establish a public education program. Develop a brochure for all homeowners using on-site systems describing the proper use of their systems and include it in their property tax bill or water bill, etc.

3. Establish a liaison with Tallahassee-Leon County Planning Department. Ensure that zoning officials are furnished maps of areas of known failure and areas of high risk so that development densities in these areas can be held to the level that physical systems can sustain.

The types of entities capable of managing a decentralized wastewater treatment system such as that which could develop under the recommended action would depend on Florida rules and regulations. Entities capable of managing decentralized wastewater treatment systems include municipalities, counties, townships, electric cooperatives, and special districts. With proper authority, a public management entity can ensure the use of on-site and small community systems as effective wastewater management tools in preventing water pollution and public health problems.

III. SUMMARY OF DRAFT EIS

PART A. BACKGROUND OF STUDY

In response to rapid growth in Leon County, wastewater facilities planning studies were conducted in 1972 and 1973 to determine how service could be expanded in a cost-effective and environmentally sound manner. These studies identified a need for additional facilities, the costs of which were believed too high for the residents of the County and the City of Tallahassee to bear alone. As a result, it was decided to apply for federal grants to fund a majority of the facilities costs, and a 201 Facilities Plan was prepared by William M. Bishop Consulting Engineers, Inc.

The draft Tallahassee-Leon County 201 Plan was approved in April, 1977, by the City and County Commissions and received initial approval from the Florida DER and the EPA. EPA subsequently decided to release Step II grants for only those facilities which would relieve existing water quality problems. This decision was made in part as a result of opposition from citizens and private organizations to portions of the 201 Plan. It was further decided that an EIS would be prepared on those portions of the 201 Plan which support future growth that may result in significant environmental impacts.

EPA has funded only those facilities which relieve existing water quality problems under the first phase of 201 planning. These facilities are:

PHASE 1

Completed and Operational

1. Upgrading of 2.5 mgd Southwest Treatment Plant
2. New Southwest Holding Pond and Pumping Station
3. New 22.5 mgd Southwest to Southeast Force Main
4. New 10.0 mgd Southeast Sprayfield, Holding Pond and Pump Station
5. Expansion of Southeast Sprayfield to 17.5 mgd

Under Construction or Awaiting Construction

1. Expansion of T. P. Smith Plant to 15.0 mgd
2. Abandonment of the Dale Mabry Plant

3. New 17.5 mgd Sludge Handling Facility

Those proposed facilities under the Phase 2 portion of the 201 Plan which are covered by this EIS are:

PHASE 2 (Subject to EIS Study)

1. New 5.0 mgd Northeast Plant
2. New 60,000-Linear-Foot Force Main to Southeast Sprayfield from Northeast Plant
3. Expansion of 2,000-Acre Southwest Sprayfield
4. Expansion of T. P. Smith Plant Beyond 15.0 mgd
5. Additional Interceptors to Growth Areas

The EIS was initiated because of the following issues raised by organizations and individual citizens:

1. Public health risks may be associated with land application of wastewater.
2. Wastewater flow projections may be too high.
3. Potential detrimental impacts to wetlands may result from development in northeast Leon County.
4. Northeast treatment plant may be incompatible with residential use of the area.
5. The construction, operation, and maintenance of the Northeast plant force main to the Southeast sprayfield may have detrimental impacts on wetlands and the dam at Lake Lafayette.
6. The renovation of the Lake Bradford plant may be more cost- effective than closing it.
7. Any of the alternatives may have potential impacts on the habitats of threatened and endangered flora and fauna.

PART B. ALTERNATIVES DEVELOPMENT AND EVALUATION

Alternatives development and evaluation must be based on a consideration of the existing wastewater management system in Leon County. There are five municipal wastewater treatment plants in the study area, all of which are owned by the City of Tallahassee. Besides these public facilities, there are eighteen privately-owned wastewater treatment plants scattered through the study area. In addition, subsurface on-lot treatment and disposal is used extensively by individuals and commercial establishments in all areas not served by municipal wastewater facilities.

The City of Tallahassee wastewater collection and treatment system serves approximately a 60-square mile area with a population approaching 90,000. Wastewater is conveyed by approximately 430 miles of sewer lines, both gravity and force mains, to the various treatment plants.

The results of a flow monitoring program undertaken by the EIS consultants revealed that, for the most part, the existing wastewater collection system has sufficient capacity to serve its immediate and some future needs. Construction programs are already underway to relieve constraints in the area just south of Meginnis Arm and neighborhoods north of Centerville Road and east of Meridian Road.

Infiltration/inflow (I/I) is not considered excessive in the study area and, therefore, it is more economical for the City to treat I/I than to rehabilitate the the sewer system.

The Thomas P. Smith plant is a 7.5 mgd activated sludge facility which, because of its size and location, receives wastewater from much of the study area. This plant operates in parallel with the 2.5 mgd high-rate trickling filter Southwest Plant located on the same site. Since the recent start-up of the 201 Plan Phase-1 Southeast sprayfield facility, treated effluent from both plants is either sprayed onto this site or sprayed onto 120 acres of land surrounding the treatment facility. Sludge disposal is by landspreading on City-owned lands adjacent to the airport. Plant performance data from 1978 indicated good treatment efficiency and a high quality effluent. Expansion of the Thomas P. Smith plant to a capacity of 15.0 mgd is under way. Planned under the EPA approved 201 Plan, Phase I is a new 17.5 mgd sludge handling facility. This facility calls for a sludge dewatering and land filling system.

The Lake Bradford plant, a 4.5 mgd activated sludge facility, treats wastewater generated from the central core of Tallahassee including institutional flow from both the Florida State University and Florida A & M as well as from the state government complex. Any flow in excess of 4.5 mgd is diverted to the Thomas P. Smith/Southwest treatment facility. Sludge disposal is by landspreading on City-owned lands adjacent to the airport. 1978 plant performance data indicate that the plant is well operated and maintained and produces a high quality effluent.

The 0.9 mgd Dale Mabry plant is a trickling filter-activated sludge facility built in 1940. The City of Tallahassee will abandon the Dale Mabry plant when the expansion of the Thomas P. Smith plant is completed.

The Municipal Airport facility is a small package plant with a design capacity of 60,000 gpd serving the needs of the Tallahassee Municipal Airport.

There are 18 private wastewater systems located in the study area. Most of these treatment plants discharge to surface water while the remainder employ discharge to the atmosphere or groundwater via evaporation - percolation ponds and spray irrigation systems.

In areas not served by municipal sewer facilities, individual homes and businesses rely on some method of subsurface on-site treatment and disposal. Major areas utilizing on-site systems include the more recently developing areas in northeastern Leon County. Septic tank system failures have been documented by the Leon County Health Department in the area surrounding Meginnis Arm of Lake Jackson.

The development of alternatives for wastewater treatment in Leon County was accomplished in two phases. The first consisted of developing alternative wastewater service area configurations. A service area configuration is a distinct plan for providing wastewater treatment and disposal services to each designated service area either by local treatment/disposal or by regional treatment/disposal of two or more service areas. It does not include options for actual treatment and disposal methods but rather delineates locations and flows.

The second phase of alternatives development involved screening available wastewater treatment/disposal techniques for applicability within Leon County. This generated a list of options for wastewater treatment, effluent disposal, and sludge disposal for each of the service area configurations.

The result of the alternatives development process, as illustrated in Table III.1, was a few wastewater management alternatives, each with several treatment/disposal combinations. In order to quantify costs, environmental impacts and other evaluation factors for comparison of alternatives, it was necessary to go one step further. The first step of the evaluation process, therefore, was to select preferred treatment/disposal options for each wastewater management alternative.

Preferred treatment options were selected primarily so costs for each federal action alternative could be specified. Preferred options are the same for each proposed treatment plant. While these decisions are basically engineering judgments, they are not meant to dictate to the study area which options would be federally funded and which would not. The options were selected which reflect the least environmentally sensitive and most economically and technically sound implementation schemes. Secondary treatment of wastewater is the minimum level of treatment allowable for land application by the Florida DER within the study area. Advanced wastewater treatment is not considered necessary for the study area. A final selection of a preferred secondary treatment option would need to include bench-scale

TABLE III.1

SUMMARY OF FEASIBLE SYSTEM COMBINATIONS

Alternative System	Service Areas	Plant Location	Capacity (mgd) w/o FRM	Capacity (mgd) w/ FRM	Treatment Technique	Effluent Disposal Options	Effluent Disposal Sites	Sludge Disposal Options	Sludge Disposal Sites
1	SW/SE	TPS/SW	20.2	18.1	AS	SR	SE SW	LF LS C I	Adj. to Plant, Airport
	NE	NE	2.1	1.8	AS RBC	SR RI	NE(A) SE(B)	LF LS C I	Adj. to Plant, Airport
2	SW/SE/NE	TPS/SW and LBP	22.3*	19.9	AS	SR	SE SW	LF LS C I	Adj. to Plant, Airport
3	SW	TPS/SW	21.0	18.9	AS	SR	SE SW	LF LS C I	Adj. to Plant, Airport
	SE/NE	SE	1.3	1.0	AS RBC	SR	SE	LF LS C I	Adj. to Plant, Airport
4 or No Federal Action Alternative	SW**	TPS/SW	17.5	17.5	AS	SR	SE	LF	Adj. to Plant
	Growth Portions of Study Area	NA	NA	NA	ST/SC	SA	Local	NA	NA

Abreviation:
SW = Southwest
NE = Northeast
SE = Southeast
FRM = Flow Reduction Measures

TPS/SW = T.P. Smith/Southwest Treatment Facility
LBP = Lake Bradford Treatment Plant
NA = Not Applicable
AS = Activated sludge
RBC = Rotating Biological Contactor
ST/SC = Septic Tank/Small Comunity Systems
SA = Soil Absorption

SR = Slow Rate
RI = Rapid Infiltration
LF = Landfilling
LS = Landspreading
C = Composting
I = Incineration

* Lake Bradford Plant is recommended for use under this alternative system

** Infilling population that is expected to take place within the existing service area boundaries is expected to generate 17.5 mgd of wastewater.

tests of all secondary treatment options with local wastes. Similar bench-scale tests would be needed before selection of preferred sludge treatment processes can be finalized. Activated sludge is the preferred treatment option; anaerobic digestion followed by lime treatment is the preferred sludge stabilization option; and chemical conditioning followed by vacuum filtration is the preferred sludge conditioning and dewatering option.

Disposal options are subject to more qualitative judgment and debate than treatment options primarily because their environmental impacts are not readily quantifiable. The only wastewater disposal options which were evaluated in detail were land application options. Surface water discharges and other disposal options were eliminated from consideration during the Alternatives Development stage of this EIS as inappropriate for use in the study area due to cost, environmental or technical reasons. Slow-rate land application is the selected option for all areas except the Northeast where the availability of suitable sites and higher land costs favor rapid infiltration.

The favored option for sludge disposal at any suitable location in the study area after preliminary evaluation is landspreading. The option would supplement the planned 17.5-mgd sludge dewatering and landfilling system already approved for funding by the EPA. Preliminary evaluations including costs for incineration and composting operations favor the options of landspreading or landfilling. Somewhat lower costs for landspreading combined with the fact that metals and nutrients would be spread over a larger area and recycled by using disposal areas for crop production favor the landspreading option.

For sludge transport, pipelines do not allow the flexibility needed if sludge disposal sites are relocated. Costs are also higher than for other transporting methods. The choice between hauling sludge by tank or by truck is inconsequential to this EIS.

Incorporated into each of the alternative systems are the actions under Phase 1 of the 201 Plan facility expansions which include: expanded capacity of 17.5 mgd at the T.P. Smith/Southwest Treatment Facility; expansion of the Southeast Spray Facility to a capacity of 17.5 mgd; and construction of a new 17.5 mgd sludge handling and disposal system.

The alternative wastewater management systems developed and evaluated for the study area are described as follows:

1. Alternative System 1

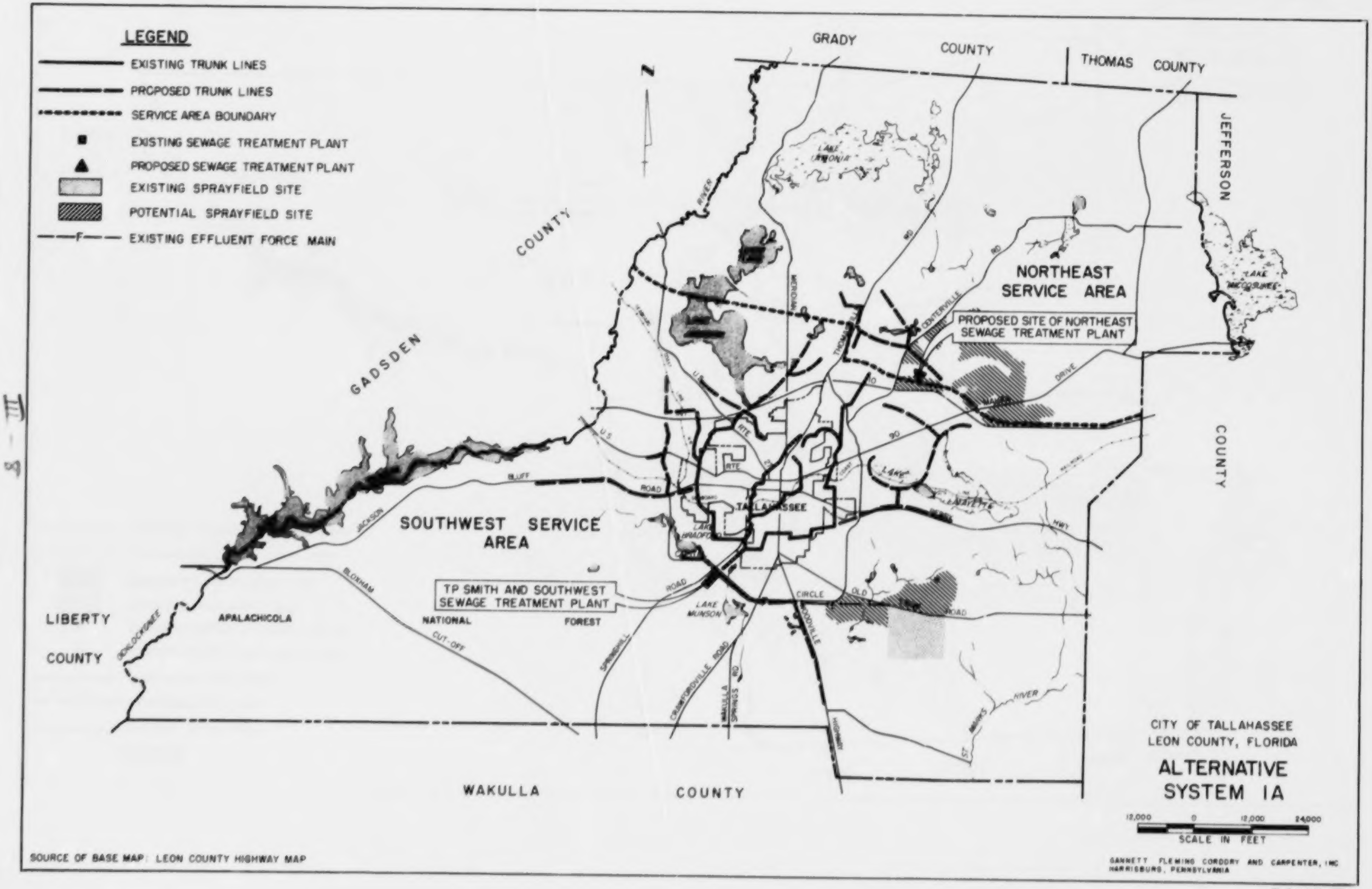
Under this alternative a new treatment plant would be constructed in the Northeast, and the T.P. Smith/Southwest treatment facility would be expanded beyond its Phase I capacity of 17.5 mgd. A Northeast treatment plant would provide wastewater service in the northeastern growth areas of Leon County. Interceptor sewers would also be extended to developed portions of the Northeast presently served by on-site and small community systems. The expanded T.P. Smith/Southwest plant would serve the Southwest and Southeast service areas. In Alternative 1A, effluent from the T.P. Smith/Southwest plant would be disposed of at the expanded Southeast Sprayfield, with the Northeast Plant effluent disposed by means of rapid infiltration at a Northeast disposal site. Alternative 1A is shown in Figure III.1. Alternative 1B, shown in Figure III.2, is the same as 1A except the Northeast plant effluent is disposed of by conveying the treated wastewater to the expanded Southeast Sprayfield. Sludge disposal beyond the capacity of the 201 Plan Phase I landfill facility would be by landspreading on sites adjacent to the treatment plant in the Southwest and Northeast or by continuing to landspread at the Airport site.

2. Alternative System 2

The structural configuration of this alternative hinges on the decision whether or not to implement flow reduction measures. The importance of flow reduction measures is based on the judgment to continue operating the Lake Bradford plant if a flow capacity greater than 4.2 mgd was needed in the service area. This occurs when flow reduction measures are not implemented. From the cost analysis described previously it has been determined that continuing to operate the Lake Bradford plant at 4.5-mgd, and expanding T. P. Smith/Southwest 0.3 mgd is more cost effective than expanding the T. P. Smith/Southwest by 4.8 mgd. With flow reduction measures, an expanded T.P. Smith/Southwest Treatment Facility would serve the entire sewered area as a regional treatment plant with a 19.9 mgd capacity. This alternative is illustrated in Figure III.3. Wastewater and sludge disposal would be carried out as in Alternative 1, with treated wastewater disposed at an expanded Southeast Sprayfield, and sludge disposal from T.P. Smith/Southwest plant beyond Phase I capacity of 17.5 mgd occurring either by landspreading adjacent to the T.P. Smith Plant or landspreading at the Airport.

3. Alternative System 3

Under this alternative a Southeast treatment plant would be constructed to supplement the treatment capacity of the expanded T. P. Smith/Southwest facility. The Southeast plant would serve the growth areas of the Southeast and Northeast. The T.P. Smith/Southwest plant would provide wastewater service to projected growth areas in the Southwest and to the existing service area. Figure III.4 illustrates this alternative. For the T. P. Smith/Southwest facility, the Phase I expansion to 17.5 mgd would provide 0.4 mgd additional capacity beyond year 2000 requirements if flow reduction measures are implemented. Without such measures, the T.P. Smith/Southwest plant would require an increase of 1.4 mgd capacity in addition to the Phase I expansion. Waste-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TP SMITH AND SOUTHWEST SEWAGE TREATMENT PLANT
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LAKE MICCOSUKEE
LAKE LAFAYETTE
LAKE BRADFORD
LAKE MUNSON
APALACHICOLA NATIONAL FOREST
OCHLOCKONEE
RIVER
ST. MARKS RIVER
BLUFF ROAD
JACKSON
BLOXHAM CUT-OFF
SPRINGHILL
CRAWFORDVILLE ROAD
WAKULLA SPRINGS RD
WOODVILLE HIGHWAY
CIRCLE
OLD ROAD
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SCALE IN FEET

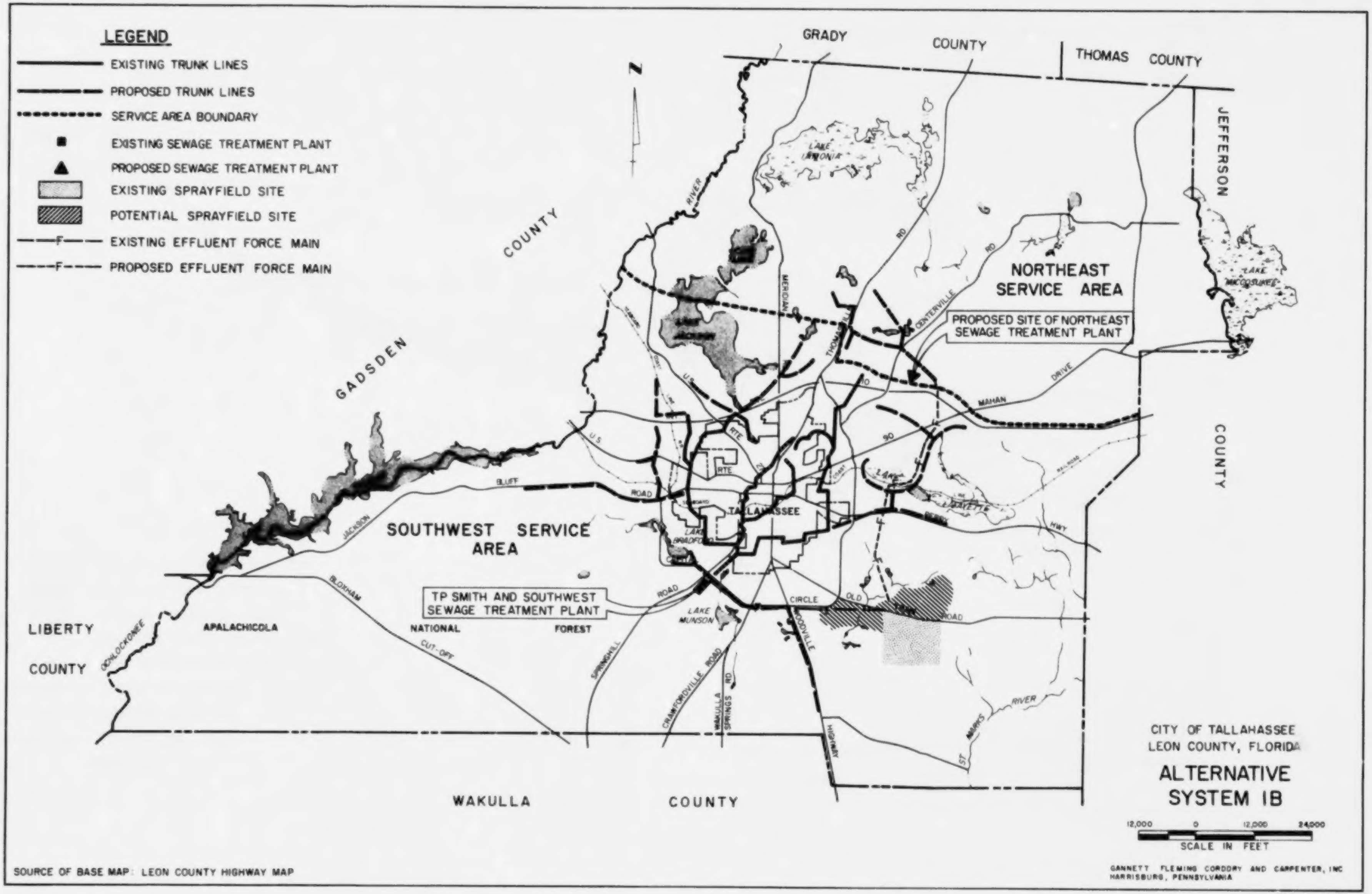
CITY OF TALLAHASSEE
LEON COUNTY, FLORIDA

ALTERNATIVE SYSTEM IA

GANNETT FLEMING CORDDRY AND CARPENTER, INC
HARRISBURG, PENNSYLVANIA

SOURCE OF BASE MAP: LEON COUNTY HIGHWAY MAP

FIGURE III 1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TP SMITH AND SOUTHWEST SEWAGE TREATMENT PLANT
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OCHLOCKONEE RIVER
ST MARKS RIVER
MERIDIAN
THOMASVILLE
CENTERVILLE RD
MAHAN DRIVE
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JACKSON
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SPRINGHILL ROAD
CRAWFORDVILLE ROAD
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SCALE IN FEET

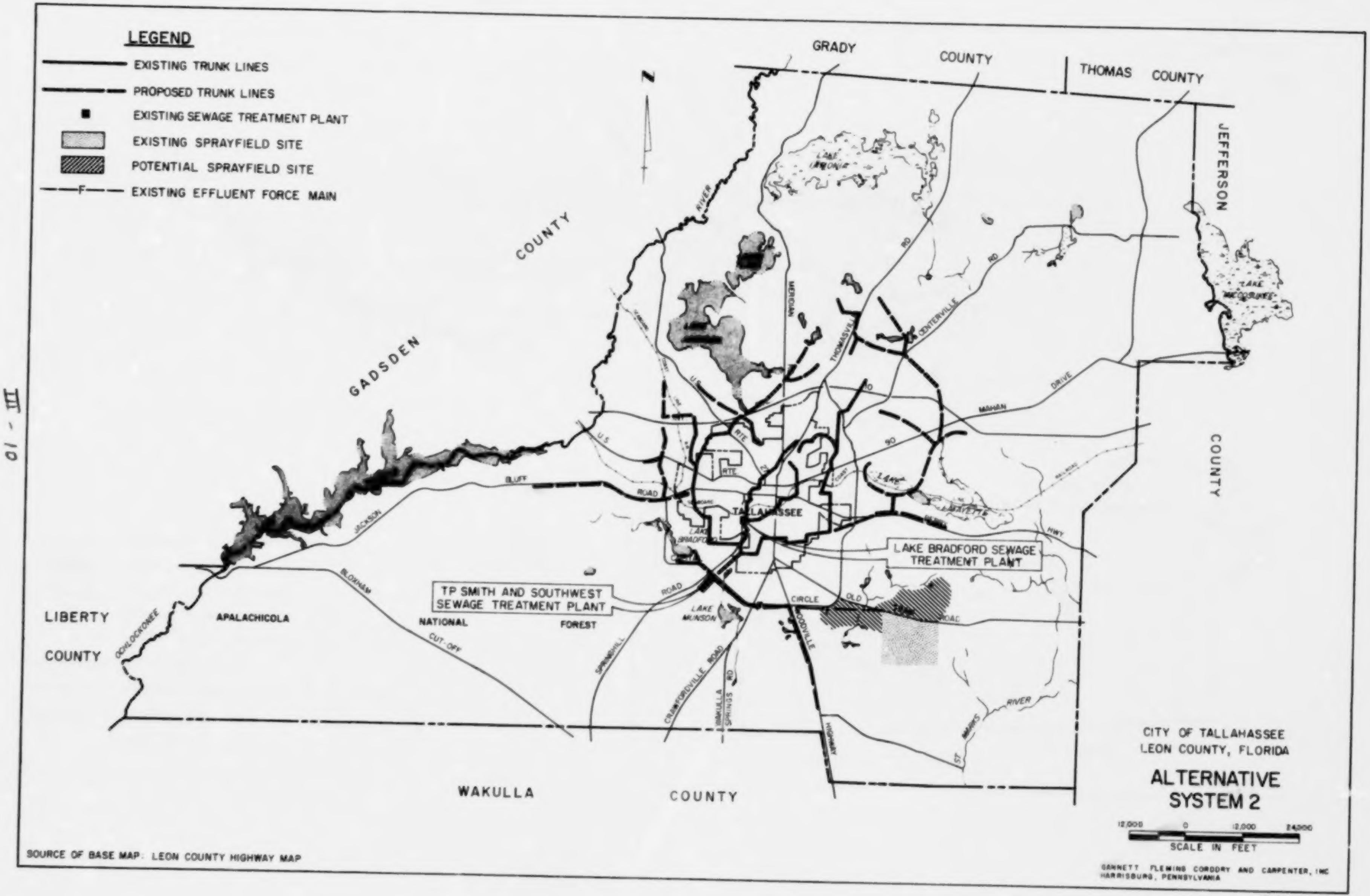
CITY OF TALLAHASSEE
LEON COUNTY, FLORIDA

ALTERNATIVE
SYSTEM IB

SOURCE OF BASE MAP: LEON COUNTY HIGHWAY MAP

GANNETT FLEMING CORDDRY AND CARPENTER, INC
HARRISBURG, PENNSYLVANIA

FIGURE III . 2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BLUFF ROAD
JACKSON
BLOXHAM CUT-OFF
APALACHICOLA NATIONAL FOREST
LAKE BRADFORD SEWAGE TREATMENT PLANT
TP SMITH AND SOUTHWEST SEWAGE TREATMENT PLANT
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CRAWFORDVILLE ROAD
WAKULLA SPRINGS RD
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SCALE IN FEET

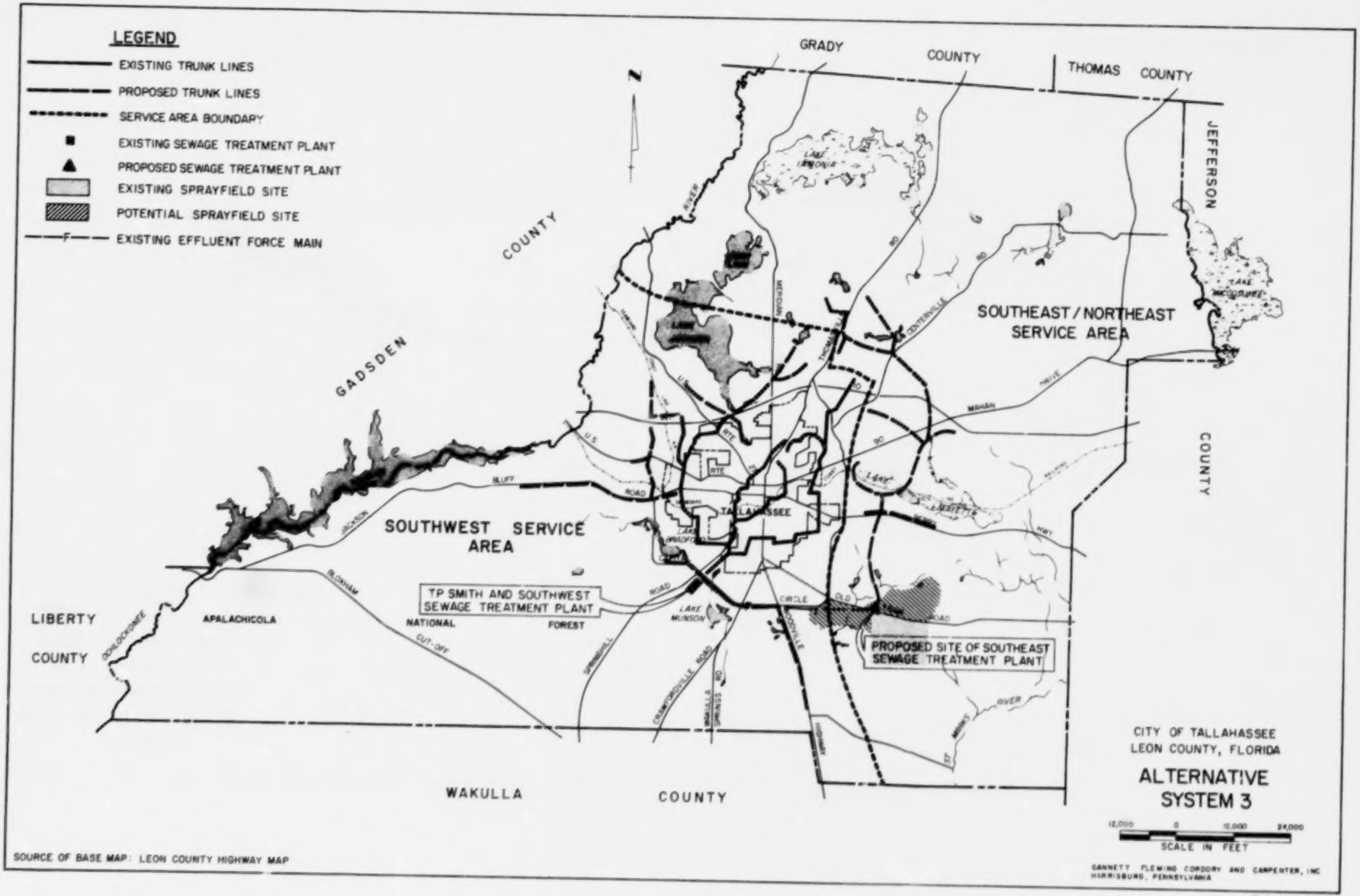
CITY OF TALLAHASSEE
LEON COUNTY, FLORIDA

ALTERNATIVE
SYSTEM 2

GANNETT FLEMING CORDDRY AND CARPENTER, INC
HARRISBURG, PENNSYLVANIA

SOURCE OF BASE MAP: LEON COUNTY HIGHWAY MAP

FIGURE III. 3



LEGEND
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PROPOSED TRUNK LINES
SERVICE AREA BOUNDARY
EXISTING SEWAGE TREATMENT PLANT
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EXISTING SPRAYFIELD SITE
POTENTIAL SPRAYFIELD SITE
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EXISTING EFFLUENT FORCE MAIN
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COUNTY
JEFFERSON
COUNTY
GADSDEN
COUNTY
LIBERTY
COUNTY
WAKULLA
COUNTY
SOUTHEAST / NORTHEAST
SERVICE AREA
SOUTHWEST SERVICE
AREA
TALLAHASSEE
TP SMITH AND SOUTHWEST
SEWAGE TREATMENT PLANT
PROPOSED SITE OF SOUTHEAST
SEWAGE TREATMENT PLANT
LAKE IAMONIA
LAKE MICCOSUKEE
LAKE JACKSON
LAKE BRADFORD
LAKE MUNSON
LAKE LAFAYETTE
APALACHICOLA
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HIGHWAY
CRAWFORDVILLE ROAD
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SCALE IN FEET

CITY OF TALLAHASSEE
LEON COUNTY, FLORIDA

ALTERNATIVE
SYSTEM 3

GANNETT FLEMING CORDDRY AND CARPENTER, INC
HARRISBURG, PENNSYLVANIA

SOURCE OF BASE MAP: LEON COUNTY HIGHWAY MAP

FIGURE III.4

water effluent would be disposed at the expanded Southeast Sprayfield. Sludge disposal beyond the capacity of the 201 Plan Phase I landfill facility is anticipated to take place either by landspreading adjacent to the proposed treatment plants in the Southwest and Southeast or by landspreading at the Airport site.

4. Alternative System 4 (No-Federal Action Alternative)

The No-Federal-Action Alternative represents how existing conditions would be altered in the future by local development pressures in the absence of federal investment. Analysis of the No-Federal-Action Alternative shows continued growth in the area if publicly-owned and funded sewage treatment facilities are not constructed. This growth would take place in response to previously committed investments and continuing pressures for new residential construction that would be accommodated in large part either by hook up to existing system, individual on-site treatment systems, or by privately-owned package plants. Thus, "no-federal-action" does not imply "no growth". The major differences between the no-federal-action alternative and any of the structural alternatives will be the density of development, the viability of some of the private real estate developments in the area, and the total and individual costs of wastewater management. Differences in impacts on the natural environment can also be expected under the funding and no-federal-funding alternatives.

It is difficult to predict the changes in development patterns that might occur if no federal grants are used to support wastewater facilities construction. The following assumptions will, however, help define the development framework sufficiently to permit an analysis of costs and impacts associated with the No-Federal-Action Alternative:

1. The City will not independently finance treatment or disposal capacity beyond the 17.5-mgd capacity of the 201 Plan Phase I facilities currently authorized for Federal participation.

2. The Dale Mabry facility will be closed.

3. The City would construct interceptors in selected unsewered areas until they reach the capacity limitation of the T.P. Smith/Southwest facility.

4. Areas not served by the City would remain or be developed with on-site or small community disposal systems depending upon the suitability of the area. Development densities will be limited to three units per acre.

Under these assumptions, development pressure is expected to be greatest inside the City's existing service area. Therefore, infilling or redevelopment of depressed areas in the City can be expected to take place during the planning period. Based on population forecasts developed by the Tallahassee - Leon County Planning Department, growth in the existing service area will add approximately 45,000 residents and 35,000 employees to the City's collection system resulting in an additional 5 mgd of wastewater reaching the T.P. Smith/Southwest facility.

An analysis was undertaken to determine currently undeveloped and developed lands and to delineate those areas which could be served by:

1. On-lot disposal systems
2. Tap-ons to the existing centralized sewer system

The analysis used a series of maps and overlays incorporating information about land use classes, flood hazard areas, soils suitable for on-lot systems, depth to water table, sewer system area boundaries, and trunk line service area boundaries.

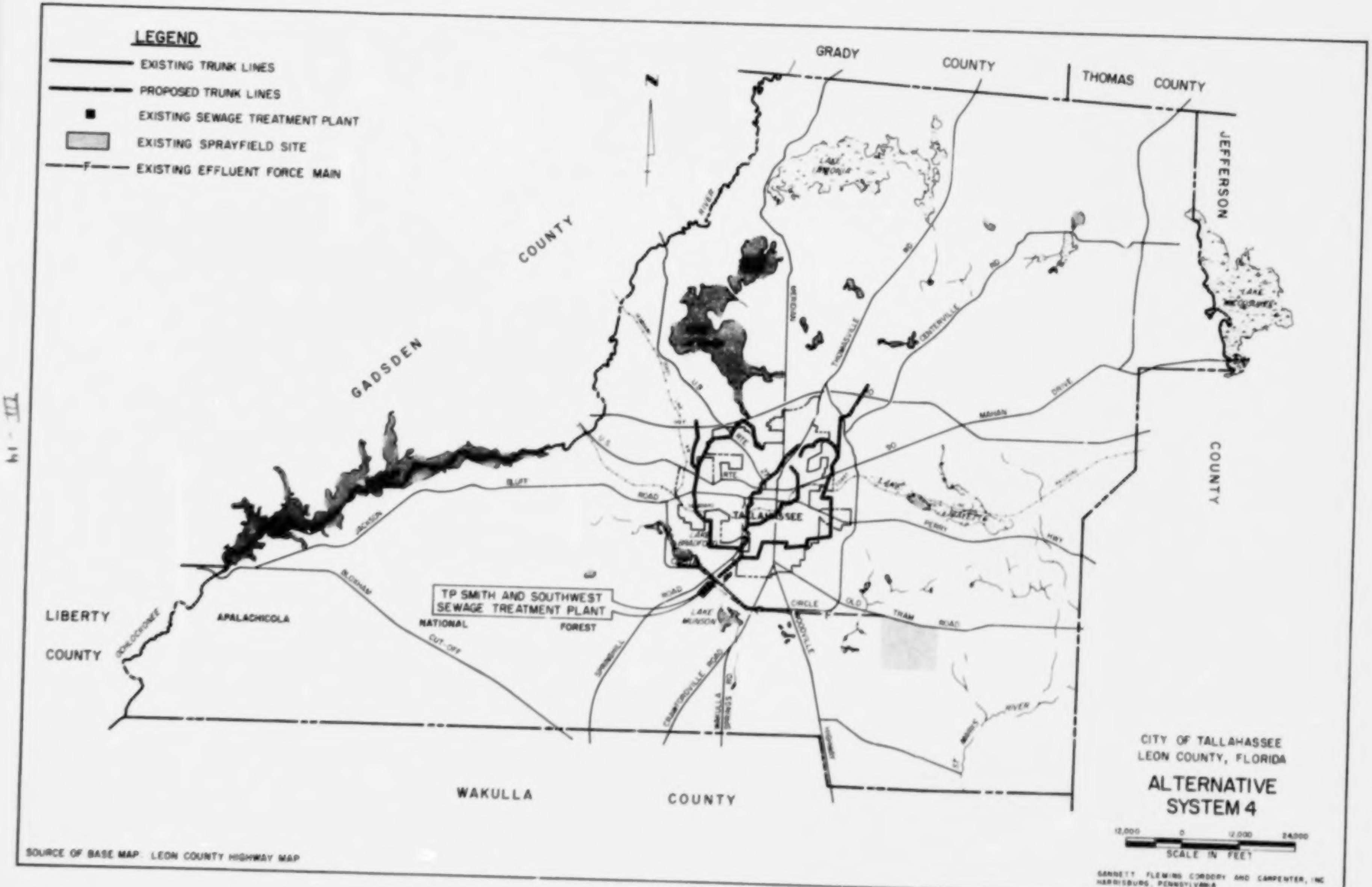
The results of this analysis indicate that the excess capacity in the existing sewer system appears to be adequate to serve future infilling population. Constraints in areas just south of Meginnis Arm and neighborhoods north of Centerville Road and east of Meridian Road will be relieved by a construction program currently underway. This construction is being funded totally at the expense of the City. Alternative 4 is illustrated on Figure III.5.

Each of the alternatives described in this section was evaluated with respect to cost, environmental impacts, technical feasibility, and implementability. Table III.2 contains a summary of the evaluation of alternatives.

PART C. DESCRIPTION OF THE RECOMMENDED ALTERNATIVE

EPA selected Alternative 4 (No-Federal Action) to be the recommended alternative as the proposed action for the draft EIS. The EIS failed to demonstrate a justified need for the 201 Plan's Phase II facilities represented by the structural alternatives. The remainder of the Phase I facilities which have been approved by EPA will serve all existing and some future needs.

As discussed in Section B, no additional centralized treatment capacity is proposed for construction in Alternative 4. Areas within the existing City service area will be served by 201's Plan's Phase I construction: expansion of T.P. Smith /Southwest facility to 17.5 mgd, expansion of Southeast sprayfield to 17.5 mgd, and construction of new 17.5 mgd sludge handling facilities. It is projected by the year 2000 the wastewater flow within the area presently served by the City will approximate 17.5 mgd, without considering flow reduction measures. Some construction of additional collectors is expected in order to connect the infilling population within the City's existing system.


LEGEND
EXISTING TRUNK LINES
PROPOSED TRUNK LINES
EXISTING SEWAGE TREATMENT PLANT
EXISTING SPRAYFIELD SITE
EXISTING EFFLUENT FORCE MAIN
F
N
GRADY COUNTY
THOMAS COUNTY
JEFFERSON COUNTY
GADSDEN COUNTY
LIBERTY COUNTY
WAKULLA COUNTY
TALLAHASSEE
TP SMITH AND SOUTHWEST SEWAGE TREATMENT PLANT
APALACHICOLA NATIONAL FOREST
LAKE MUNSON
LAKE IAMONIA
LAKE MICCOSUKEE
LAKE LAFAYETTE
MERIDIAN
THOMASVILLE RD
CENTERVILLE RD
MAHAN DRIVE
PERRY HWY
OLD TRAM ROAD
CIRCLE
WOODVILLE HIGHWAY
CRAWFORDVILLE ROAD
WAKULLA SPRINGS RD
SPRINGHILL
BLOXHAM CUT-OFF
JACKSON BLUFF ROAD
U.S.
RIVER
OCHLOCKONEE
ST. MARKS RIVER
12,000 0 12,000 24,000
SCALE IN FEET

CITY OF TALLAHASSEE
LEON COUNTY, FLORIDA

ALTERNATIVE
SYSTEM 4

SOURCE OF BASE MAP: LEON COUNTY HIGHWAY MAP

GANNETT FLEMING CORDDRY AND CARPENTER, INC.
HARRISBURG, PENNSYLVANIA

FIGURE III 5

TABLE III.2
SUMMARY OF ALTERNATIVES EVALUATION

Alternatives	Description of Alternatives	Total Present Worth ($x10)	Impacts
1A	T.P. Smith/SW plants to serve SW & SE with disposal at SE spray field. NE plant to serve NE with disposal in NE	$38.4 (29.4)*	1. Development flexibility in density and location 2. 24.3 million greather than lowest cost alternative 3. Cost to homeowners from tap-on fees and sewer use fees. 4. Construction impacts on surface waters and plant and animal resources 5. NE plant considered incompatible with existing land uses by area residents 6. City's drinking water wells down gradient of proposed rapid infiltration site 7. Increased potential for nonpoint source pollution due to increased impervious surfaces from higher density development and opportunity to develop flood plains, wetlands and high groundwater areas.
1B	Same as 1 above except NE plant effluent disposal at SE spray-field	$52.7 (46.0)*	1. Development flexibility in density and location 2. Highest cost structural alternative 3. Less impact on groundwater than 1A 4. Cost to homeowner from tap-on fees and sewer use fees 5. Alternative most desired by the City 6. Construction impacts on surface water, and plant and animal resources 7. Increased potential for non-point source pollution due to increased impervious surfaces from higher density development and opportunity to develop flood-plains, wetlands and high groundwater areas 8. Added construction impacts from transmission line to SE sprayfield
2	T.P. Smith/SW plants & Lake Bradford plant, if needed, serve as regional plants with disposal at SE sprayfield	$31.5 (27.6)*	1. Development flexibility in density and location 2. Cost to homeowner from tap-on fees and sewer use fees 3. 21.1 million greater than lowest cost alternative 4. Construction impacts on surface water and plant and animal resources 5. Maximum use of existing facilities 6. Increased potential for nonpoint source pollution due to increased impervious surfaces from higher density development and opportunity to develop flood-plains, wetlands and high groundwater areas. 7. Makes full use of already constructed force main to SE sprayfield 8. Long interceptors potentially causing anaerobic conditions and treatment problems
3	T.P. Smith/SW plants to serve SW and SE. NE served by SE plant. All disposal at SE sprayfield.	$40.0 (34.3)*	1. Development flexibility in density and location 2. 29.6 million greater than lowest cost alternative 3. Avoids public acceptance problems of NE plant 4. Cost to homeowner from tap-on fees and sewer use fees 5. Construction impacts on surface water, and plant and animal resources 6. Increased potential for nonpoint source pollution due to increased impervious surfaces from higher density development and opportunity to develop floodplains, wetlands, and high groundwater areas 7. Long interceptors causing anaerobic conditions and treatment problems
4	T.P. Smith/SW plants to serve existing city service area. Growth areas outside service area served by on-site of small community systems	$10.4** (5.98)*	1. Does not promote development of marginal lands (flood-plains, wetlands, high groundwater areas) 2. Lowest Cost 3. Most Implementable 4. Decentralized systems potentially more difficult to operate and maintain 5. Least concentrated impact on groundwater 6. Higher potential for human contact and health effects with on-lot systems under malfunction conditions 7. Least impact on streets and yards in areas now served by on-lot systems and on plant and animal communities due to reduced pipeline construction 8. Small community systems with evapor.-perk ponds present potential impact to groundwater 9. Reduced energy use.

* Cost if flow reduction measures are implemented.
** Includes costs for on-lot systems.

The following measures are recommended to minimize the chance of the occurrence of a failure and to promote correction of any failures that may occur:

1. Revision of basic rules governing septic tank use to allow for systems more suited to current and future demands. These revisions should include siting criteria, basic system design, and the use of alternative systems.
2. Monitoring of groundwater quality in the developing areas of Leon County.
3. The implementation of a management district or other means of on-site and small community systems management.

1. Regulations

Current regulations controlling the siting and design of septic systems make it difficult to implement sufficient site or design modification to compensate for less than optimum conditions. State regulations do not allow installation of an on-site system where percolation rates exceed 15 minutes per inch. Percolation rates as slow as 60 minutes per inch have been shown to be effective because such percolation rates can be compensated for with lower loading rates. In addition, allowances for a slower percolation rate are recommended to help protect groundwater from contamination and allow for site and design modifications that are more flexible. Soils with high percolation rates may not properly renovate the wastewater in standard septic systems.

Design flexibility to fit the septic system to site conditions would allow creative solutions to specific problems. Design flexibility would also allow the use of alternative systems such as pressure dousing and split bed application.

2. Groundwater Monitoring

Groundwater quality monitoring in developing areas of Leon County, where on-site or small community systems would be used, could begin before each subdivision is started. This would allow background information to be developed as well as the identification of the effects on groundwater from construction activity. Continual monitoring throughout the construction and life of the development would ensure that groundwater quality is fully known. With the location of monitoring wells up and down gradient of the groundwater movement and within the development area, the impact to groundwater resources can be detected. Should adverse conditions appear to be developing, corrective actions such as those described in Chapter III, Part C of the Draft EIS can be taken.

3. Management Districts

Poor operation and maintenance (O&M) of on-site and small community systems can be one cause of failure. Public management of these systems is a possible means of ensuring that improper operation and maintenance does not contribute to system failure. Although poor operation and maintenance is recognized as one cause of septic system failure, regulatory agencies generally do not set standards or specific requirements to ensure proper operation and maintenance. In general, the regulations are applicable to the design and construction of septic systems but leave the operation and maintenance responsibility to homeowners.

To minimize O&M causing problems, a number of communities have opted for public management of on-site and small community systems. These public entities accepted the authority to control these systems. These on-site management agencies exercise control and enforcement authority in the areas of siting and design, installation, operation and maintenance and problem correction.

The types of entities capable of managing decentralized wastewater treatment systems such as that which could develop under the No-Federal-Action Alternative would depend on Florida rules and regulations. Entities capable of managing decentralized wastewater treatment systems include municipalities, counties, townships, electric cooperatives, and special taxing districts. With proper authority, a public management entity can ensure the use of on-site and small community systems as effective wastewater management tools in preventing water pollution and public health problems.

PART D. DESCRIPTION OF THE STUDY AREA

Leon County is located in northwestern Florida. The only incorporated city within the study area, Tallahassee, serves as both state capital and county seat. The majority of the County's population is concentrated within Tallahassee and its immediate environs. Most new urbanization has occurred north and east of the City. The remaining land area is comprised of natural and planted woodlands and swamps and contains scattered residential development.

This Environmental Impact Statement has been prepared to address the provision of wastewater management facilities for Leon County. It is necessary to document the existing natural and man-made environments so that an assessment of the primary and secondary impacts of alternative actions can be made and mitigative measures for each alternative can be recommended.

1. Existing Natural Environment

Leon County is located 20 miles from the Gulf of Mexico and has a mild and moist climate that is characteristic of the Gulf States. The average year-round temperature in Tallahassee is 68° F (20° C) and has varied between 65° F (18.3° C) and 71° F (21.6° C). The average yearly rainfall is about 61 inches (154.9 cm) with variations from as low as 30.98 inches (78.7 cm) to 104.18 inches (264.6 cm). Prevailing winds average 7.7 miles per hour. They are from a southerly direction in the spring and summer and shift toward a more northerly direction near the end of the year.

No major odor producers are identified within the boundaries of the EIS study area. A few potential sources of odor, such as sewage treatment plants and light industry exist, but these are apparently under control. According to the Florida Department of Environmental Regulation (FDER), no major violations of ambient air quality standards have been reported recently, and air quality in the study area has been good. The primary noise generators in the study area are the Tallahassee Municipal Airport, railroad corridors, and Interstate 10, U.S. 319, U.S. 90, and U.S. 27.

Three major physiographic divisions are recognized in Leon County: 1) the Northern Highlands, 2) the Gulf Coastal Lowlands, and 3) The River Valley Lowlands. Development in the study area has taken place mainly in the Northern Highlands, which is projected as the major future growth area, and to a lesser degree in the Gulf Coastal Lowlands. Subsurface geological formations in the study area include the Miccosukee and the Hawthorn Formations in northern Leon County, the St. Marks Formation and Sewanee Limestone in southeast Leon County, and the Jackson Bluff Formation in southwest Leon County.

About 25 percent of the land in the study area has slopes between one and four percent. The remainder of the County has slopes exceeding four percent in areas characterized by gently rolling topography. Slopes may exceed 10 to 15 percent in some areas along drainage ways.

The soils in the Tallahassee area and northeastern Leon County are generally well-drained, loamy sand to sandy loams. In southern and southeastern Leon County, the soils are well to excessively drained. In southwestern Leon County, the soils are nearly level, somewhat poorly drained sands overlying thick beds of clastics.

Five bodies of water in the study area can be considered large lakes: Iamonia, Jackson, Lafayette, Miccosukee and Talquin. Each lake occupies an ancient stream valley in the Tallahassee Red Hills and has a direct flow connection with the limestone aquifer via one or more sinkholes. This allows the water level of the lakes to fluctuate greatly even to the point in varying diversity and density of plants and animals in the area surrounding the lakes.

There are two major rivers associated with Leon County, the Ochlocknee which forms the western border of the County and the St. Marks found in the southeastern portion of the County. Leon County has many relatively permanent lakes and ponds that are smaller than the five large lakes. Some of these are Moon Lake, Silver Lake, Eagle Lake, Lake Munson, Orchard Pond, Lake Bradford, the Cascades, Dog Pond, Dog Lake, Lake Hall, and Lake Ella. In the Woodville Karst Plain there exist a number of open sink ponds, some examples being Gopher Sink and Dismal Sink. As a result of isolation from one another, these ponds formed their own unique ecosystems. Many small bodies of water in Leon County are called ephemeral ponds because they tend to dry up.

Leon County has only a few marshes confined to the edges of the larger lakes. Branch or creek swamps in this region occur along fourth or fifth order tributaries. River swamps occur along the St. Marks and Ochlokonee Rivers in rich broadleaf woodlands that periodically become inundated by high river waters.

The groundwater reservoir in Leon County consists of a sequence of limestones and dolomites. The saturated portion of the overlying sands, clays, and silts is also utilized in some localities. The limestone and dolomite section is named the Floridan Aquifer and is the principle source of groundwater in Leon County. The overlying sands, silts, and clays comprise the Floridan Aquiclude and confine the water in the Floridan Aquifer under artesian pressure. Some beds in the Floridan Aquiclude yield small supplies of groundwater and are called water table aquifers.

The majority of the water obtained from wells in the Tallahassee area is of good quality without color, odor, or objectionable taste and relatively low in dissolved solids and hardness. The only parameter which shows a few high readings is iron. Chlorination is the only treatment process required prior to distribution.

Aquatic systems in the Tallahassee area can be categorized as two types: lentic (standing water systems) which include ponds, lakes and swamps, and loxic (flowing water systems) and pond systems are the predominant aquatic type within the Tallahassee area.

In the Environmental Monitoring Program (EMP) of the Tallahassee-Leon County EIS, aquatic faunal and floral components were studied with the purpose of defining existing water quality conditions within the study area. These studies indicate that the aquatic systems of the study area are currently suffering from degraded water quality. While the problems are widespread, there are indications that there is a direct relationship to non-point and point pollution sources. The Lake Munson system seems to be in the worst condition. Major contributing factors to these problems are most likely urban runoff and effluent discharges from wastewater treatment plants.

The classification of the terrestrial vegetation has developed through a series of studies to a detailed mapping effort. The 201 Study (1), 208 Study (City of Tallahassee, 1977) (1), 208 Study (Tallahassee-Leon County Planning Department 1978) (2), and the EIS Environmental Monitoring Program-Segment II (EPA 1980) activities have all addressed vegetation.

The EIS field investigations of potential sprayfield areas were under taken with several goals in mind: 1) to provide detailed descriptions of vegetation communities by quantitative sampling; 2) to field truth vegetation maps and aerial photos; 3) to make observations concerning the presence of protected species or their potential habitats; and 4) to compare ecological features of potential sprayfield sites. The field investigations concluded that nine vegetation types were present in the potential sprayfield sites: longleaf pine-scrub oak; longleaf pine-scrub oak-wiregrass; longleaf pine-pasture; pine plantation; pine forest; oak-hickory forest; mixed hardwoods; wetlands; and open land.

The definition and description of the wildlife in Leon County have been much less sophisticated than that of the vegetation. The level of effort involved has generally been restricted to species lists. This effort has been extended to habitat/wildlife associations only for protected or sensitive species.

EIS field investigations showed that several protected animals are likely to occur within some of the potential sprayfield areas, although none of these species were seen during field investigations. In the southern sprayfield sites, proper habitat conditions were present for the occurrence of the gopher frog, indigo snake, gopher tortoise, red-cockaded woodpecker, and southeastern kestrel.

A number of ecosystems have been identified as being vulnerable to impacts of wastewater management systems or development, or as providing habitat for threatened and endangered species. The ecosystems may be grouped in the following categories: lakes, wetlands, aquatic-subterranean ecosystems, habitats for protected species, steepheads and other ravines, and floodplains.

Nonpoint source pollution refers to nondiscrete and diffuse inputs or loadings which are usually associated with rainfall events and are associated with both natural processes and human activities. Non-point sources which affect the study area include atmosphere, vegetation, urban areas, construction activities, agriculture-silviculture activities and solid waste disposal sites.

2. Existing Man-Made Environment

The populations of Tallahassee and Leon County have experienced steady growth over the past 50 years. The primary factor in population growth has been in-migration. The sunbelt states and Florida in particular have experienced significant population increases over the last two decades. In addition, Tallahassee is the State's capital and the site of Florida State University and Florida A&M University. Increased opportunities in government employment and increased enrollments have both contributed to in-migration.

The Tallahassee-Leon County Planning Department (TLCPD) 1977 population projections were employed in the EIS. These projections show 20,000 fewer persons than were planned for in the 201 Plan. The 1977 TLCPD projections call for a population of 192,113 in 1990 and 239,034 in 2000. The 1980 final census figure of 148,655 for Leon County tends to confirm the accuracy of the TLCPD 1977 estimate of 149,480.

Residential land use is the predominant land use in the study area. Other land uses in Leon County include commercial, industrial, institutional, open space, agriculture, transportation/utilities, and the Appalachicola National Forest. Developed land accounts for 35,644 acres or only 8.3 percent of total land area in the County.

TLCPD land use projections show a requirement for 63,105 acres of developed land by the year 2000. Given the areas of available land in Leon County and the location of major highways serving the County, most of the future growth is expected to occur on vacant land available within the urban area, and north and east of the present urban area.

Leon County is primarily a government, trade and service center. 50.8 percent of nonagricultural employment is in government, reflecting Tallahassee's status as the state capital. Approximately 20.3 percent of the nonagricultural employment is in wholesale and retail trade. The third largest employment sector is services, which records 12.9 percent of total nonfarm employment, and is attributable to the presence of Florida A&M University, Florida State University, and the Tallahassee Community College in the study area.

A wide variety of recreational opportunities are available in Leon County. Apalachicola National Forest is the largest recreational resource in this area covering 103,471 acres. Silver Lake, located within the Forest offers a complete range of outdoor activities. Numerous State, County, City, and privately owned parks and recreational facilities are available for public use.

Of the major components of the transportation system (highway, air, rail, and water), only highway and air systems have significant importance to the study area. Four major Federal highways, U.S. 90, U.S. 27, U.S. 319, and I-10, intersect the Tallahassee area. The Tallahassee Municipal Airport is owned and operated by the City of Tallahassee and is served by several commercial airlines. There are no important navigable waters or significant rail centers in the study area, although there is rail freight service to Leon County.

Various natural resources are found and utilized within the Tallahassee-Leon County study area. The major natural resources are minerals, timber, agriculture, freshwater fish and wildlife.

One sanitary landfill is found in the study area, located on U.S. 27 South. It is owned and operated by Leon County. The existing site comprises 620 acres with only 82 acres permitted at this time and has a life of 30 years. The sanitary landfill operates the trench method and uses the cell concept for compacting the refuse. The landfill currently disposes of about 400 tons of waste daily.

The existing wastewater management system in the study area is described in Part B.

Land development controls are an important aspect of water quality management planning. Land use regulations can be used to direct development away from sensitive environmental areas, including water quality-sensitive areas. Land use controls can also serve to mitigate any short or long-term negative impacts that may result from the provision of wastewater treatment and disposal facilities. Leon County and the City of Tallahassee at present administer many environmentally oriented regulatory measures. However, most ordinances now in effect are only for the purpose of regulating development. Few ordinances take a comprehensive approach toward resources and their use.

PART E. ENVIRONMENTAL IMPACTS OF ALTERNATIVES

The most significant environmental impacts that would be caused by each alternative are described below:

1. Alternative 4: No Further Federal Action

The major difference between this alternative and the other alternatives is the wastewater management system envisioned for the developing areas of Leon County. Environmental impacts potentially associated with the widespread use of on-site and small community systems are as follows:

1. The use of on-site systems limits development densities. Lower density of development can have beneficial water quality effects. Because there will be less impervious surface per developed acre, pollution from urban runoff will be less per acre than

under the other alternatives. Water quality problems should be reduced due to less overland flow of stormwater runoff.

2. The use of on-site systems eliminates the need for construction of sewer lines and the adverse impacts that result.
3. This alternative promotes the infilling of areas which are already sewered resulting in higher density development in these areas.

Under Alternative 4 effluent disposal would be handled by a variety of on-site and small community systems relying largely on subsurface drainfields, evaporation/perc ponds and/or sandmounds. Rather than concentrating the pollutant load at one or two sprayfields, this alternative, in effect, spreads the load throughout the area. Therefore, on an areawide basis adverse environmental impacts may be less severe than they would be under Alternatives 1 through 3. On a localized basis, however, malfunctioning on-site disposal systems can have the following adverse impacts.

1. On-site systems are more difficult to operate and maintain.
2. The malfunctioning of an on-site system presents a higher potential for human contact.

2. Alternatives 1-3: Centralized Wastewater Management Alternatives

Alternatives 1 through 3 propose a centralized wastewater management system in developing areas of Leon County. A centralized wastewater management system can support higher development densities than on-site and small community systems would allow. In addition, Alternatives 1-3 propose an extensive collection system which extends lines into the Lake Lafayette wetlands and Northeast service area. Impacts common to Alternatives 1-3 include the following:

1. An increased potential for nonpoint source pollution due to increased impervious surfaces from higher density development. This could adversely affect surface water quality and aquatic ecosystems.
2. Construction of collection lines could have a temporary adverse impact on surface water quality and terrestrial ecosystems. Areas of concern include Gum Swamp in the Southwest and the Lake Lafayette wetlands area, Piney-Z Lake, and Alford Arm in the Northeast.

3. Allows for development flexibility in density and location.

The preferred effluent disposal option for Alternative 1A is rapid infiltration at a Northeast effluent disposal site. The site was chosen as the least environmentally sensitive of nine possible sites. It is a 440-acre tract containing 348 acres of open land and no permanent streams or wetlands whose water quality could be adversely impacted. There is a low potential for disturbing the habitat of threatened or endangered species. The most significant impact associated with this disposal method and site is the potential for groundwater contamination if pollutant removal capabilities are not adequate. Solution channels could develop in areas underlain by limestone. Groundwater levels could rise over time; the decrease in the depth to water table could allow effluent to enter the groundwater before being fully renovated.

The preferred effluent disposal option for Alternatives 1B, 2, and 3 is the use of slow rate land application at the Southeast Sprayfield expansion site. At the sprayfield, potential exists for the following impacts:

1. Runoff of pollutants not taken up by crops or bound by the soil could adversely affect nearby surface waters. Inadequate agricultural management could result in sediment, herbicide, and pesticide runoff. Aquatic ecosystems could be adversely impacted.

2. Groundwater contamination is possible due to karst areas which underlie much of the southern portion of Leon County.

Preferred options for sludge disposal beyond the capacity provided by the 201 Phase I landfilling facilities consist of landspreading at sites adjacent to the Northeast plant, the Southeast plant and the T.P. Smith/Southwest plant or the Airport. Potential significant impacts are as follows:

1. Odor problems can arise if the sludge is not properly stabilized and incorporated into the soil. Problems with odors from stored sludge are also possible.

2. Low pH in soils throughout the study area could result in uptake of heavy metals (especially cadmium) by plants. At the Southwest site, excess seepage rates will require lining of the liquid sludge holding ponds. The same problem is found at the Southeast site to a greater degree.

3. Possible impacts can occur from runoff of 1) pollutants not taken up by crops or bound by the soil, or 2) agricultural chemicals or sediment.

4. Runoff from disposal sites could adversely impact aquatic ecosystems either through heavy metal toxicity or nutrient enrichment.

A management group or agency could be developed to oversee the siting, design, installation, and operation of on-site and small community systems. With proper authority, a public management entity can ensure the proper use of on-site and small community systems as effective wastewater management tools in preventing water pollution and public health problems. Mitigative measures and recommendations for the recommended action are discussed in more detail in Chapter II (page II-3).

PART F. EIS COORDINATION

Public participation programs are mandated by federal regulations governing the preparation of Environmental Impact Statements. Public participation is an important and valuable part of the EIS process in that it provides for active public involvement in developing and evaluating wastewater management alternatives.

At the beginning of the Tallahassee-Leon County EIS, a public participation program was established to provide opportunities for interested groups, individuals and governmental agencies to participate in the development of the EIS. The focal point of this program was the establishment of a Review Committee. This group served in an advisory capacity to EPA and its consultants. Specific functions and duties of the group included:

1. Identifying local planning and environmental objectives

2. Identifying study area issues and conflicts regarding wastewater disposal and environmental conditions

3. Reviewing all task report submissions

4. Assisting in the development and evaluation of wastewater alternatives

The public participation program included one public scoping meeting and four Review Committee meetings. The Review Committee was composed of 23 persons representing 10 public agencies and 13 private groups. A broad range of community interests was included: business persons' groups and trade associations, environmental groups, homeowners associations, and developers. Table III.3 lists the committee membership.

On November 29, 1978, a public hearing (scoping meeting) was held at the R.D. Gray Building in Tallahassee to describe the procedures EPA would use in preparing the EIS. The meeting included presentations on the purpose and background of the EIS, the 201 Study, the scope of the EIS and issues to be addressed, the EIS schedule, and a description of the public participation

TABLE III.3
TALLAHASSEE-LEON COUNTY EIS

Review Committee

Organization	Representative
Board of County Commissioners Leon County	George Flatt Leon County Dept. of Public Works Division of Utilities Services Leon County Courthouse Tallahassee, Florida 32304
Apalachee Audobon Society	Mr. R. Marvin Cook, Jr. Chapter President P.O. Box 1237 Tallahassee, Florida 32302
Clean Water, Inc.	Ms. Terri Saltiel President 7769 Deep Wood Trail Tallahassee, Florida 32301
Florida Department of Environmental Regulation	Mr. Gerald Neubauer Manager N.W. District Tallahassee Branch Office Twin Towers Office Building 2600 Blair Stone Road Tallahassee, Florida 32301
Florida Wildlife Federation	Mr. C. Richard Tillis Director Office of Environmental Education Knott Building Tallahassee, Florida 32301
Killearn Homes Association	Mr. Philip Anthony 2620 Bantry Bay Drive Tallahassee, Florida 32308
Lakeshore Homeowners Association	Mr. Estus Whitfield 3515 Sharer Road Tallahassee, Florida 32312
League of Women Voters of Tallahassee	Miss Martha Chapman 129 North Franklin Boulevard Tallahassee, Florida 32304
Falls Chase Special Tax District	Mr. J. D. Boone Kuersteiner Attorney-at-Law 115 South Adams Tallahassee, Florida 32302

TABLE III.3 (CONT'D.)
TALLAHASSEE-LEON COUNTY EIS

Leon County Health Department	Mr. Rhett White P.O. Box 2745 Tallahassee, Florida 32301
Munson Area Preservation, Inc.	Mr. Glen Carter President 1808 Old Briar Trail Tallahassee, Florida 32304
Office of the City Attorney	Mr. Jim English Henry, Buchanan, Mick & English, PA 118 South Monroe Street Tallahassee, Florida 32301
National Wild Turkey Federation	Mr. Charles J. Allen Route 5, Box 3150 Tallahassee, Florida 32301
Sierra Club Florida Chapter, Big Bend Group	Mr. David Allender 1532 Brook Street Tallahassee, Florida
City of Tallahassee	Mr. Michael Schneider City of Tallahassee 201 Program Route 12, Box 9999 Tallahassee, Florida 32301
Tallahassee Area Chamber of Commerce	Mr. Terry Lewis P.O. Box 1876 Tallahassee, Florida 32302
Tallahassee Department of Underground Utilities	Thomas P. Smith, P.E. 2602 Jackson Bluff Road Tallahassee, Florida 32304
Tallahassee-Leon County Planning Department	Mr. Thomas Pierce Lewis State Bank Building Suite 201 215 South Monroe Street Tallahassee, Florida 32301
Tallahassee Water Quality Laboratory	Mr. William G. Leseman Laboratory Supervisor 2602 Jackson Bluff Road Tallahassee, Florida 32304
U.S. Department of Agriculture Forest Service	Mr. Donald C. Hughes Forest Service P.O. Box 13549 Tallahassee, Florida 32308

TABLE III.3 (CONT'D.)
TALLAHASSEE-LEON COUNTY EIS

U.S. Department of the Interior Geological Survey	Glen Faulkner Water Resources Division 325 John Knox Road Suite L-103 Tallahassee, Florida 32303
Windwood Hills Homeowner's Association	Ms. Elizabeth A. Steenblik 1121 East Windwood Way Tallahassee, Florida 32301

program. Afterwards, several citizens and officials made comments.

The first Review Committee meeting was held on May 16, 1979 at the Myers Park Community Center to review the EIS Plan of Study. Gaps in the existing data base for terrestrial and aquatic systems were discussed, and the design of a sampling program was presented. The Committee was asked to confirm if all major issues of the EIS had been identified and incorporated into the work effort.

The format of the first Review Committee meeting and all subsequent ones consisted of a presentation by the EIS consultants followed by the Committee dividing into two round table discussion groups. At the end of the evening, a representative from each table summarized the discussion for the benefit of the other table and observers.

The second Review Committee was held on January 9, 1980, at the Myers Park Community Center to review the Environmental Inventory task report and the Alternatives Development task report. The program started with the showing of a 30-minute videotape prepared by the EIS consultants highlighting the issues of local concern and certain aspects of aquatic and terrestrial ecosystems. During the discussion group sessions, Review Committee concerns centered on spray irrigation impacts, wastewater flow projections, the development potential of the northeast portions of the Tallahassee urban area, the desirability of a Northeast wastewater treatment plant, impacts to vegetation and wildlife, and the implementability of widescale use of on-site disposal systems or small community systems.

The third Review Committee meeting was held on January 15, 1981, at the Lafayette Community Center to review the Alternative Evaluation task report. Each of the four alternatives was discussed in turn. Concern focused mainly on Alternative 1 (T.P. Smith/Southwest and Northeast Plants) and Alternative 4 (No-Federal-Action). The widespread use of on-site systems and their maintenance continued to be a matter of concern. Institutional management aspects of on-site systems were perceived to be a serious problem. Other questions addressed cost analyses and wastewater flow projections.

The fourth Review Committee meeting was held on July 9, 1981, at the Myers Park Community Center to present a briefing paper describing the No-Federal-Action Alternative that was selected by the EPA Region IV Regional Administrator. Discussion focused on the need for and responsibilities of a management agency for on-site and small community systems. In addition, committee members requested an expanded discussion in the EIS of causes of system failure, corrective actions, and mitigative measures.

IV. REVISIONS TO THE DRAFT EIS AND ADDITIONAL INFORMATION

Comments received concerning the Draft EIS revealed some corrections which were needed to rectify errors in the report. Below the correction, location in text, and comment in which the correction is noted are given.

Page II-2, end of last paragraph before Section 2.	Add paragraph, "The service area designated on Figure II-1 as T.E.C. Lakewood Village (3) is actually Talquin's Lake Jackson Water Service Area. The Lakewood Village Sewer Service area is a smaller area located within the Lake Jackson area. The area designated as T.E.C.-Killearn Lakes (5) is a water service district which has been approved for the use of septic tanks. All other service areas designated on Figure II-1 are sewer service areas."	W-9
Page II-20, last paragraph	Change first sentence to read, "In the predominantly unsewered southern portion of Leon County there are many small drainage areas due to karst sinks."	W-35
Page II-22, first paragraph, sixth line	Change phrase from "four to eight" to, "three to five"	W-5
Page II-51, last column, sub-total row	Change "17." to "17.7".	W-75
Page II-54, top of page	Add paragraph, "Population: In the Tallahassee Urban area, population growth and economic growth will, for the most part, be induced by the presence of state government employment opportunities and the expansion of the two major universities. However, population infilling within the urban area will be encouraged by the lack of a centralized system outside of the City's service area."	W-45
Page II-54, between last two paragraphs	Add paragraph, "Soils: Soils may clog due to suspended solids in effluent and treatment and disposal efficiencies may be impaired."	W-48

Page II-54, add to Wastewater Disposal Section	Add paragraph, "Natural Resources Use: Any potential recycling of nutrients or benefits of growing crops are lost."	W-49
Page II-71, end of second paragraph	Add sentence, "The Leon County Health Department currently holds the responsibility of permitting wastewater treatment/disposal systems which have daily flow less than or equal to 2000 gallons."	W-6
Page II-71, third paragraph, second sentence	Change "will" to "may".	W-10
Page II-71, third paragraph, fourth sentence	Delete sentences, "This agency is now trying to obtain responsibility for managing and operating several water supply systems owned by Talquin Electric Cooperative (T.E.C.). Similarly, it may eventually take over the responsibility of operating T.E.C. and other privately-owned wastewater systems."	W-10
Page III-4, second to last paragraph, last sentence	Change, "fifteen" to "ten". Delete, "primary".	W-121
Page III-4, end of second to last paragraph	Add sentences, "field data provided by the City of Tallahassee show little or no flow in these stream crossings. This data was collected at a time when Leon County was experiencing an extended dry period."	W-121
Page III-5, second to last line	Add "suitable," between "of" and "unsaturated".	W-103
Page III-6, end of second paragraph	Add, "The recent EPA publication, Design Manual, Onsite Wastewater Treatment and Disposal Systems, October 1980, presents a detailed coverage of design, siting, installation, and operation for a variety of on-site systems."	W-101
Page III-9, last entry under "Authority Needed"	Add sentence, "It will be necessary to carefully and specifically define system 'malfunctions' in order to efficiently realize this authority.	W-114

Page III-10, third paragraph, second sentence	Revise sentence to read, "Presently, soil absorption fields are sized on the basis of the proposed or anticipated number of bedrooms and the results of the site evaluation and percolation tests."	W-40
Page IV-33, paragraph IV.a., last sentence	Replace phrase, "a threatened species" with, "a species of special concern".	W-56
Page IV-51, last paragraph, second sentence	Replace term, "citrus groves" with "orchard groves".	W-57
Page IV-55, second to last item in bulleted list	Add sentence, "(The City Utilities Sewer Division claims this situation has improved since the completion of the 201 Plan.)"	W-58
Page IV-57, second paragraph, second sentence	Sentence should read, "In the past effluent was either discharged to Munson Slough, where it eventually entered Lake Munson or was sprayed onto 120 acres of land surrounding the treatment facility." Add sentences, "Recently, effluent disposal has begun at the 201 Phase I Southeast Sprayfield and surface water discharges from the TP Smith/Southwest Plants have ceased. The small sprayfield adjacent to the plant is still in use."	W-59
Page IV-57, end of third paragraph	Add sentence, "The centrifuge has not been used recently because a) landfilling is not being used for ultimate sludge disposal and b) the centrifuge has been a maintenance problem and its production has not been sufficient to justify its use."	W-59
Page IV-71, Noise	Under "Description of Impact", sentence should read, "Operation of farm machinery and trucks hauling/spreading sludge or septage." Under Alt. 4 for this impact add direct, "D" negative, "-", long term, "L", and minimum, "Min".	W-60

Page IV-71, Surface Water Quality	Label impacts under Alts 1-3 for, "Sedimentation from... collection system," "Sig" rather than "Maj".	W-121
Page IV-72, Aquatic Ecosystems	Label impacts under Alts. 1-3 for, "Sedimentation from... disrupt aquatic communities", "Sig" rather than "Maj".	W-121

V. COMMENTS ON THE DRAFT EIS AND EPA RESPONSES

The Draft Environmental Impact Statement (DEIS) was published and made available to the public on September 17, 1981. The DEIS was provided to various Federal, State, and local agencies, as well as concerned individuals, interest groups, and public officials. The public hearing was held in Tallahassee, Florida on November 5, 1981. In addition to the public input afforded by the hearing (a transcript provided herein), many letters were received and are included in this Final EIS.

The designations in the margins of the letters identify specific comments for which responses have been developed. These responses follow the letters. In a similar manner, the designations in the margins of the hearing transcript identify comments which have received responses. Many of the transcript comments were similar or identical to the written; consequently, some transcript responses refer to responses to written comments already presented.

PART A. WRITTEN COMMENTS

Index to Written Comments

Comment	Name	Agency
W-1	John M. Giarnese	Department of the Air Force
W-2 thru W-7	Van R. Hoofnagle	Florida Department of Environmental Regulation, Bureau of Wastewater Management and Grants
W-8	Jesse B. Livingston	U.S. Department of Agriculture, Soil Conservation Service
W-9 thru W-11	James W. Parrish	Leon County, Board of County Commissioners
W-12	William M. Baldwin	Consulting Engineer
W-13, W-14	William M. Baldwin	Tallahassee Board of Architects and Engineers
W-15 thru W-96	Hurley W. Rudd	City of Tallahassee
W-97	Willis E. Ruland	Department of the Army
W-98 thru W-104	Frank S. Lisella	Department of Health and Human Services, Center for Environmental Health
W-105 thru W-107	James H. Lee	U.S. Department of the Interior
W-108	Clifton G. Brown	Department of Housing and Urban Development
W-109	Glen Carter and Jessie Brown	Munson Area Preservation, Inc.
W-110	Jesse B. Livingston	U.S. Department of Agriculture, Soil Conservation Service
W-111 thru W-115	Walter O. Kolb	State of Florida, Office of the Governor

W-116 thru W-120	Richard W. Smith	Florida Department of Environmental Regulation, Bureau of Wastewater Management and Grants
W-121, W-122	T. Michael Schneider	City of Tallahassee, 201 Program
W-123 thru W-127	William G. Leseman	City of Tallahassee, Water Quality Lab

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE AIR FORCE
REGIONAL CIVIL ENGINEER, EASTERN REGION (HQ AFESC)
526 TITLE BUILDING, 30 PRYOR STREET, S.W.
ATLANTA, GEORGIA 30303

REPLY TO ATTN OF: ROV2

22 September 1981

SUBJECT: Draft Environmental Impact Statement (DEIS), Tallahassee - Leon County, Florida

TO: U. S. Environmental Protection Agency
Region IV
Attn: Mr. John E. Hagan, III, PE
Chief, EIS Branch
345 Courtland Street, N. E.
Atlanta, Georgia 30365

1. We have reviewed subject DEIS and find that development of the proposed program will have no impact on Air Force operations in Florida. W-1

2. Thank you for the opportunity to review this DEIS. Our point of contact is Mr. Winfred G. Dodson, commercial telephone number 221-6821/6776.

JOHN M. GIARNESE
Captain, USAF, Deputy Chief
Environmental Planning Division

Cy to: USAF/LEEV

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

September 30, 1981

Mr. John E. Hagan, III, P.E.
Chief, EIS Branch
U. S. Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Re: C120581010 (Step 1) - City of Tallahassee
Environmental Impact Statement - Draft Report

Dear Mr. Hagan:

The Florida Department of Environmental Regulation (DER) has reviewed the above referenced draft report and offers the following comments/ questions for your consideration:

1) Page II-35 and II-39 indicated that the sludge disposal option for Alternative 4-- "No Federal Action" is landfilling. However, the text on Page II-34 and in Section 6 of the report indicate the selected alternative is landspreading. Are you using these terms interchangable or can the reviewer assume that landfilling was later rejected? Was a cost-effectiveness analysis done in comparing these two options? W-2

2) In comparing Alternative 4 with the other three alternatives, did you include the Operation and Maintenance (O & M) costs for the Thomas P. Smith and Southwest Treatment Plants in Alternative 4 although these facilities are not being expanded? All O & M costs for both centralized and on-lot facilities should be considered. W-3

3) Page II-66 discusses establishment of a centralized management agency with various responsibilities, the most critical being notification of homeowners. Does the City of Tallahassee have any intention of establishing such an agency? Where is septage presently being disposed of? Will the Thomas P. Smith sewage treatment plant have facilities for accepting septage? Such facilities are grant eligible. Will the City of Tallahassee build only such facilities "incumbent on the implementation of a public management agency" (Page III-5)? W-4

4) For Alternative 4, you have recommended 4-to 8-year intervals between septic tank pumpouts. Often septic tank systems will become overloaded and their solids flow into the drainfield, thus causing clogging, in only three to five years. W-5

Protecting Florida and Your Quality of Life

5) On Pages II-70 to II-72 in your discussion of Public Agency Actions, you have not identified the agency responsible for approval and permitting of individual on-lot septic systems, which is a critical element of Alternative 4. The DER believes that a discussion of the responsibilities, criteria and concerns of the Leon County Public Health Department is in order. W-6

6) Upon final EPA approval of the Tallahassee EIS, it is our understanding that the grantee will submit either a revised 201 Facility Plan incorporating the recommendations of the EIS or the grantee will adopt the EIS into the 201 Facility Plan by a letter amendment. Upon completion of the grantee's adoption/incorporation or revision to the 201 Plan, the DER will be in a position to offer final review comments and certify the Facility Plan. It is our further understanding that at that time EPA may approve the Facilities Plan and issue a "Finding of No Significant Impact" (FONSI) on the selected alternative. Please inform the DER if this procedure is inappropriate or incorrect. W-7

If you have any questions please contact me at 904/488-2582.

Sincerely,

Van R. Hoofnagle, P.E.
Sewage Technology and Planning Section
Bureau of Wastewater Management and Grants

VRH/wc

cc: David Peacock - EPA/Atlanta
Mike Schneider - City of Tallahassee
Richard Sublette - DER/Pensacola
Al Bain - Gannet, Fleming, Cordry and Carpenter

United States
Department of
Agriculture

Soil
Conservation
Service

P. O. Box 1208
Gainesville, FL 32602

Subject: EVT - Draft Environmental Impact Statements

Date: October 8, 1981

To: John E. Hagan III, P.E.
Chief, EIS Branch
EPA, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

We have no comments on the Draft Environmental Impact Statement for Leon County Wastewater Management, Tallahassee, Leon County, Florida. W-8

Jesse B Livingston (Acting)
James W. Mitchell
State Conservationist

cc: Norman Berg, Chief, NO, SCS, Washington, D.C.

ENVIRONMENTAL IMPACT STATEMENT
BRANCH
RECEIVED
OCT 16 1981
REGION IV - EPA

The Soil Conservation Service
is an agency of the
Department of Agriculture

Board of County Commissioners

BOARD OF COUNTY COMMISSIONERS
LEON COUNTY COURTHOUSE
TALLAHASSEE, FLORIDA 32301
904-488-4710

Commissioners
DOUG NICHOLS
District 1
GAYLE NELSON
District 2
JIM CREWS
District 3
ROBERT HENDERSON
District 4
J. LEE VAUSE
District 5
JAMES W. PARRISH
County Administrator
F.E. STEINMEYER, III
County Attorney

October 30, 1981

Mr. John E. Hagan, III, P.E.
Chief, E.I.S. Branch
EPA, Region IV
345 Courtland Street, N. E.
Atlanta, Georgia 30365

Dear Mr. Hagan:

I have completed a review of the draft Tallahassee/Leon County Environmental Impact Statement, and I have found the document to be essentially complete. However, I would like to take this opportunity to identify what I consider to be two inaccuracies within the document and will provide amendments which would correct these errors.

1. Two of Talquin Electric Cooperative's water service areas were inadvertently identified as sewer service areas in Figure II.1. The Killearn Lakes area is a water service district which has been approved for the use of septic tanks. This area should be deleted from the figure. W-9

   The area identified as the Lakewood Sewer Area is actually Talquin's Lake Jackson Water Service Area. The Lakewood Sewer Service Area is a much smaller area located within the Lake Jackson area. Attached for your use is a Lakewood Village Sewer Bounary Map in order that you might amend Figure II.1. accordingly.

2. The other area of concern is the section entitled Leon County Public Works Department, on page II-71. Two statements in the section are inaccurate and do not reflect current County ordinances and policies. The first statement of concern indicated that the Public Works Department will be the operating agency for all wastewater facilities other than the City's. The second statement of concern indicated that Leon County has been actively engaging in the negotiation to take control of Talquin Systems.

> Leon County Ordinance 80-20 provides for the regulation of facilities and Board authorization of future facility placements. In addition, Ordinance 80-29 provides a legal mechanism for the County to own and operate such systems when the Board of County Commissioners deems it appropriate. However, as yet there has been no active contemplation by Leon County to get into the water or sewer business. In the event that neither the City, Talquin, or other suitable entity is identified nor willing to operate a system, then the County would be forced to consider the operation of the system for the benefit of the Leon County Community. In essence, Board policy has been to consider operation as a last resort. W-10
>
> As to the negotiations to take control of Talquin Systems, County staff initiated an investigation earlier this year to determine the necessary additional staffing and other related needs to effectively operate a system. This investigation was initiated for planning purposes only and was intended to prepare the County should the Board of County Commissioners ever elect or desire to enter into the systems operation business.

In closing, the County's position with regard to the use of septic tanks and community systems has not deviated from the Board's position as it was previously described in the April 28, 1981 reply to Mr. Robert Howard. The County believes that this alternative, in addition to the alternative to expand the City Central System, when economically practical, will prove to be environmentally sound, financially realistic and the most flexible approach. W-11

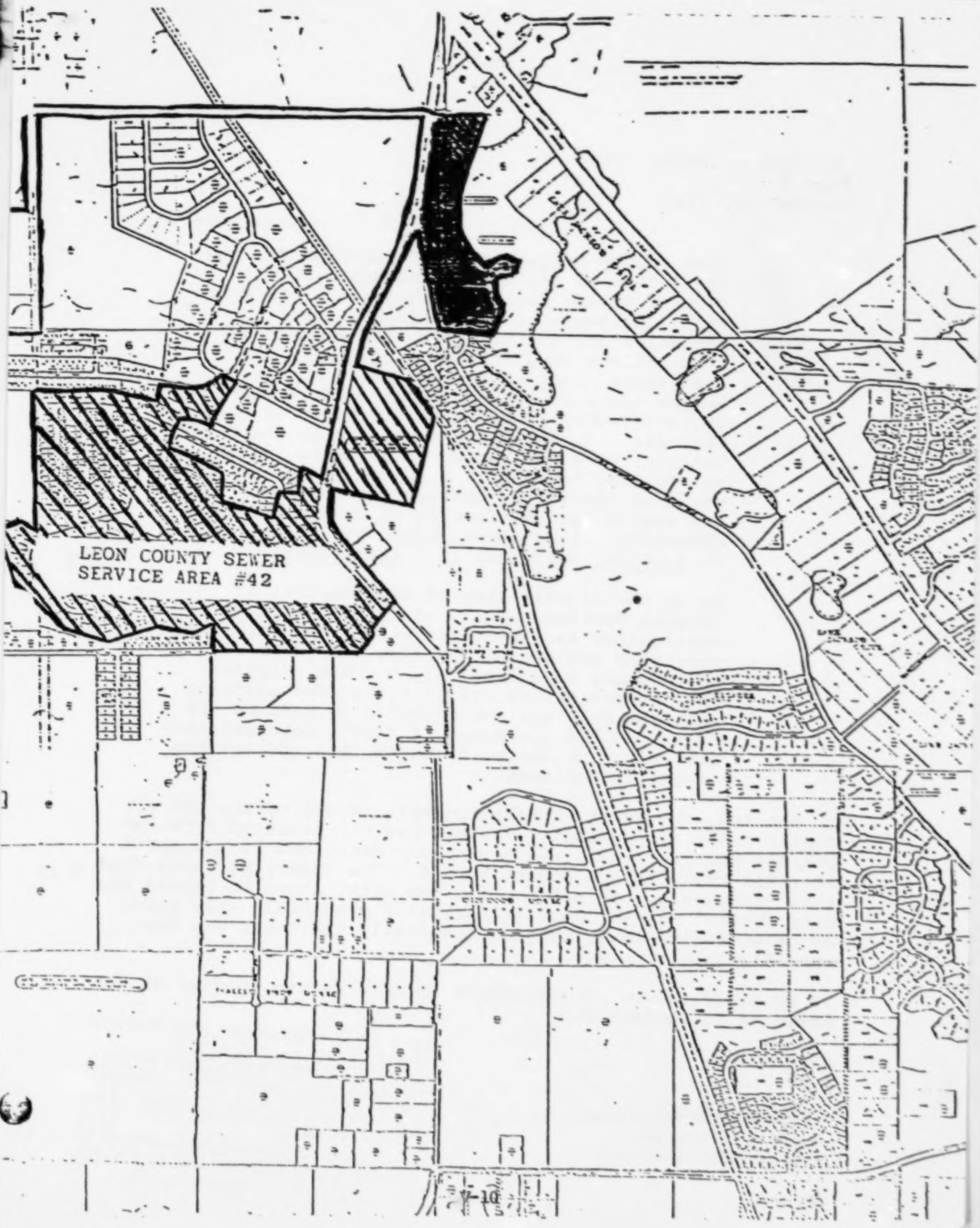
If my staff can be of assistance in this matter, please do not hesitate to contact me.

Sincerely,

James W Parrish
James W. Parrish
County Administrator

JWP/ka

ENVIRONMENTAL IMPACT STATEMENT BRANCH
RECEIVED
NOV 05 1981
REGION IV - EPA


LEON COUNTY SEWER
SERVICE AREA #42

William M. Baldwin, P.E., P.A.

Consulting Engineer

CEDARS EXECUTIVE CENTER — SUITE 250-B
2639 NORTH MONROE STREET
TALLAHASSEE, FLORIDA 32303

TELEPHONE 904/386-3206
HOME 904/385-3196

November 4, 1981

TO: Mr. John E. Hagen III, P. E.
Chief, EIS Branch
Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30365

RE: Tallahassee - Leon County
Environmental Impact Study

I have reviewed the document submitted and have serious concerns relative to the conclusions reached.

Leon County soils in developing areas in general, are not suitable for septic tanks or other similar on site disposal schemes. This is shown on the Fig. IV. 10. of the EIS and documented by the Soils Conservation Soils Map of the County.

W-12

My professional and personal observations verify the high probability of on site disposal system failures. For the past 15 years I have designed building foundations. In the North and Northeast parts of Tallahassee about 75% of the houses I have checked in the past 5 years have been on soils which will not percolate. The soils, highly plastic clays, randomly occur North of U.S. 90. For this reason, septic tanks for most homes and small businesses will not work. On the street where my home is located, nearly all septic tanks and drain fields (mine is a lone exception) have been rebuilt one or more times.

I like the concept of small STP's and septic tanks but with the odds about 3:1 failure, I think the health risks are not acceptable.

This community must accept the need for sewers into the North and Northeast as development occurs. Sewage or treated effluent must be transported to the South where soils will accept water.

Sincerely,

William M Baldwin

WILLIAM M. BALDWIN, P.E.

WMB/bb

William M. Baldwin, P.E., P.A.

Consulting Engineer

CEDARS EXECUTIVE CENTER — SUITE 250-B
2639 NORTH MONROE STREET
TALLAHASSEE, FLORIDA 32303

TELEPHONE 904/386-3206
HOME 904/385-3198

November 5, 1981

TO: Mr. John E. Hagen III, P. E.
Chief, EIS Branch
Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30365

RE: Tallahassee - Leon County
Environmental Impact Study

I have been requested by the Tallahassee Board of Architects and Engineers to express this organizations concerns regarding the captioned study.

Several serious problems related to wastewater treatment and disposal are not addressed in this study.

The conclusion that package sewage treatment plants and septic tanks will be usable is not borne out by the soils maps within the body of the report. Fig. IV. - 10. W-13

About 3/4 of northern Leon County is underlain by plastic or highly plastic clays which are virtually impermeable. This drastically limits underground disposal sites.

New Department of Environmental Regulation rules virtually eliminate surface disposal due to unreasonable limitations and large buffer zones. Small commercial plants cannot be used in most cases because of the large site requirements. In addition, stormwater must be kept on site compounding water problems and the two cannot be mixed per proposed DER stormwater rules.

Unless sewers are available in North and Northeast Leon County only large 1/2 A.+ lots can be developed for residences and no commercial development requiring 2,000 GPD or more can be built. W-14

The design professional in private practice questions the possibility of future growth of the community if the recommended Alternative #4 is selected.

Sincerely,

William M Bald

WILLIAM M. BALDWIN, P. E.

WMB/bb

ENVIRONMENTAL [illegible]

City of Tallahassee

OFFICE OF
THE MAYOR

CITY HALL • TALLAHASSEE, FLORIDA 32304

November 5, 1981

Mr. Charles R. Jeter
Regional Administrator
Environmental Protection Agency
Region IV
345 Courtland Street
Atlanta, Georgia 30365

Dear Mr. Jeter:

On Wednesday, September 16, 1981, Joe Dykes, Mike Schneider and I met with you and requested that you not release the Draft Environmental Impact Statement (DEIS) for the Tallahassee-Leon County area. It was known from information in the Preliminary Decision Paper that the recommended action of the DEIS would not be an acceptable solution for the residents of this area.

While our professional staff had reason to believe the DEIS would not be acceptable, we had no idea that it would be as unacceptable as it has proven to be following a close examination. There are many instances of information in one section not being in agreement with information in another section. In fact, there are instances where information in one section is completely reversed in another section. There are instances where the same situation shows favor to one alternative and is not mentioned in evaluating another alternative.

The above contradictions, examples of which are given in an attachment, are enough to question the entire report. However, the unacceptability does not end with numerous problems of this category. There are errors of fact throughout the publication. Examples of these errors are listed in an attachment.

Mr. Jeter, it is my understanding you are one of the few Regional Administrators who has a sound technological background. If you would personally review the DEIS and the attachment to this letter, I believe you would have ample reason to rescind the DEIS and I am requesting you do so in the best interest of the citizens of this entire area. W-15

It is our further understanding that EPA will comment on each question and statement found in the attachment to this letter, and the attachment with EPA's comments will be bound in the final EIS. Please let me know if this is not the case.

Thank you.

Sincerely,

Hurley W. Rudd
Mayor

HWR/cg
Attachment
cc: Mr. John E. Hagan III, P.E., EPA
Mr. Richard W. Smith, P.E., FDER

COMMENTS FROM THE CITY OF TALLAHASSEE'S STAFF CONCERNING THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

1. Centralized sewer systems are unaffected by various water level uses or monthly rainfall. The large family with a good deal of laundry or the family who likes to take long showers must pay more for their high consumption, but they are able to make the choice. If they live on a ¼ acre lot with clay soil and a 20 minute perk they probably will be forced to cut back on consumption, especially during the summer months when rainfall is the heaviest, showers taken more frequently and clothes washed more often. The wastewater problems which had been removed will now be back in the yard. An on-site wastewater system does initially cost less, but you also get less. W-16

2. When addressing past problems with on-site systems and their causes, the EIS consistently states that "these are considered to be institutional problems that can be overcome". Attitudes such as this demonstrate a lack of understanding of the political situation in this area and the effect political decisions have on engineering design. On-site system designs are extremely susceptible to political influence. One recent example is the rule allowing on-site systems on ½ acre lots. W-17

3. The EIS recommends expansion of the City wastewater system to "pickup" the area by Meginnis Arm which was discussed in the "J" Series Study. However, the soil types found in the "J" area are common in N.E. Leon County. Do the EIS consultants feel the problem found in the "J" Series Study was a unique situation? W-18

4. The EPA Manual "On-site Wastewater Treatment and Disposal Systems" does not mention the design life of a drainfield.

Septic tank drainfields are designed to fail. If they didn't filter the water leaving the septic tank, they wouldn't be doing one of their primary jobs. Therefore, after a period of time, the filter surface is sealed with filterable material and the drainfield fails. At this time it must be replaced.

What is the design life of drainfields constructed in the clay soil found in N.E. Leon County? W-19

5. Homeowner association and/or developer management of package plants will be plagued with problems unless the plant owner is held responsible for its performance. Otherwise, the homeowners will be stuck with cheap, unworkable systems after the plant owner has "left the picture". Should a package plant be abondoned, who would be responsible for its operation? W-20

6. Current rules of the Department of Health and Rehabilitative Services Programs Chapter 10D-6 Standards for Individual Sewage Disposal Facilities states that "A percolation rate over fifteen (15) minutes is unsuitable for absorption beds or drainfields." Since many of the soils in Northeast Leon County will have perk tests exceeding the 15 minute maximum, how does the EIS recommend we circumvent a state rule? W-21

7. Neither the Leon County Health Department, which permits septic tanks in this area, nor the State of Florida, Department of Health & Rehabilitative Services, which issues the septic tank rules for the State, has provided an effective control to insure acceptable septic tank performance by requiring management and control techniques which would govern the design, construction and operation of septic tanks.

Public management of septic tank systems in Florida and this local area lacks established standards.

In the State of Florida septic tank maintenance is an owner responsibility. The great majority of owners do not have any idea of how the system works or how to properly operate and maintain it. Neglect usually comes from the owner not being aware of maintenance needs.

Therefore, what reason is there to believe that the local area will establish a septic tank management system with rules more stringent than the "minimum standards" set forth in the State rules for septic tanks (Chapter 10D-6)? W-22

We submit that there are County Health Departments in Florida ready to enforce rules more stringent than State rules, but they cannot obtain the authority to act. We further submit that no local area in Florida will be able to establish rules more strict than the State rule. Do you feel otherwise? If so, Why? W-23

8. Can a single area comparable to Leon County in climate, soils, area and population, in the United States, be named that incorporates a management agency as the EIS suggests and has rules more strict than its State standard? We suggest not, one hasn't been presented to date. Should an example be found, please give the name and phone number of the person in charge of the management agency. W-24

9. How many water quality monitoring wells will be required by the year 2000 to provide an acceptable assurance of safe drinking water? How many of these wells would fall into the following depth categories?

0 - 50'
50' - 100'
100' - 150'
200' & deeper

W-25

Should monitoring wells show contamination of the drinking water acquifer, what is the remedy? Please explain the sewer and water solutions in detail.

10. The EIS clearly stated in eight of its formal publications that an investigation of the proposed 2000 acre Southwest spray irrigation field would be a major output of the study.

A. Preliminary Plan of Study
Item "B" under "Major Issues of the EIS" concerns "alternative spray irrigation sites."

B. Preliminary Study Background Task Report
Item "1" under "Issues of Local Concern" is "Spray Irrigation Impacts"

C. Second Segment-Plan of Study (Preliminary)
1. Item "1" under "Background" is "Spray Irrigation Impacts".

2. Item "3" under "Those actions which will be covered by the EIS include" is "Proposed 2000 - acre Southwest spray irrigation field".

D. Environmental Inventory Task Report Item "1" under a paragraph which heads a list of the EIS issues is "Spray Irrigation Impacts".

E. Environmental Monitoring Program - Segment II
Item "(2)" under "Conclusions" is "Potential sprayfield sites... S.W. Sprayfield..."

F. Environmental Monitoring Program - Segment II Item "(2)" under "Conclusions" is "Potential sprayfield sites .... S.W. Sprayfield...".

G. Alternatives Development - Pages 89 - 90
"... land adjacent to the T.P. Smith/Southwest treatment facility ... a viable alternative ... "

H. Draft - Alternatives Evaluation - Volume II
pages I-7 and I-8
"...summary of issues follows:
1. Land Application Impacts - "

Considering the eight specific references above, why wasn't anything significant done to show the environmental impact, if any, of the proposed 2000 acre S.W. sprayfield? W-26

We submit that the S.W. sprayfield was not in line with the predetermined outcome of the EIS and was, therefore, shelved. Can it be shown that environmental and economic studies of the proposed 2000 acre S.W. sprayfield were made?

Was consideration given to construction of the S.W. sprayfield using equipment now in service in the S.E.? What was the cost differential and breakdown between the two sites (S.E. & S.W.)? What was the cost per gallon per year? Was energy conservation considered in the evaluation of the S.W. sprayfield? If not, why not?

11. With references to a N.E. treatment plant and disposal in the N.E., what are the increased impervious surfaces listed in the "Cons" column of the "Preliminary Decision Paper"? Is it suggested that a higher density development will occur in the N.E. than available under the State septic tank rule (¼ acre lots)? If so, we suggest no one investigated the type development presently occuring in the N.E. and will continue no matter which type of wastewater treatment is used. W-27

12. How many homes are within a half mile circle of the proposed site of the N.E. treatment plant (±10%)? From within 100 yards of any of these homes could anyone see any structure of the proposed N.E. treatment plant? If so, how many? (±10%)? With these facts, how can the EIS state the facility is incompatable with existing land uses (p. vi, I-3)? We do not feel that odors or vehicle traffic would be a problem, do you? If so, please explain. W-28

13. With reference to alternative 1A, what logic can be given that supports the EIS statement in the "Con" column "Construction impacts on surface waters and plant and animal resources" (P.vi)? With 500± square feet in each septic tank drainfield, how can central wastewater facilities amount to a greater number of square feet? A large number of new homes in Tallahassee are leaving their lots "natural" (no clearing of the yard). To clear 500± square feet of this natural environment for the initial drainfield will impact "waters and plant and animal resources". Please compare the construction of individual systems and central systems and define which will give the greater impact. W-29

Please note that once a permanent central system is installed that the construction is complete for 50+ years while septic tank drainfields are reconstructed considerably more often.

14. The Florida State rule for septic tanks (Chapter 10D-6) clearly states under the title "Prohibitions" that

> "Whenever an approved sanitary sewer is made available (Section 10D-6.25), any individual sewage disposal system device or equipment shall be abandoned and the sewage wastes from the residence or building shall be discharged to the sanitary sewer through a properly constructed house sewer within three-hundred and sixty-five (365) days after notification that such a system is available."

Considering this rule which was developed by the State's highest health agency, it can be seen what action they deem necessary to protect the health of the citizens of Florida. It can also be seen that they consider their "minimum standards" only an interim measure until a sewer is available. Why do you think otherwise? W-30

15. The State of Florida requires that effluent not contain more than 10 mg/l nitrate by the time it reaches the groundwater. We have no reason to believe the nitrate will drop to 10 mg/l from the time it leaves a community system's percolation pond until it reaches the groundwater. Do you feel there is a dependable way in which this will happen? EPA publication "Process Design Manual, EPA 625/1-77-008,"... concluded that the only feasible mechanism for removing large quantities of nitrogen in high-rate applications is denitrification". Why do you think this is not the case in the Leon County area? W-31

16. Who, by name, in EPA's Region IV Water Supply Branch is stating that septic tanks and package treatment plants in N.E. Leon County will not degrade Tallahassee's drinking water wells? If there is no such career EPA person who will take the responsibility of taking this stand, why is the EIS advocating it? W-32

17. With reference to Table II.18, why isn't a cost listed for sludge disposal for septic tanks? How many sludge trucks of what size will be needed by the year 1990? The year 2000? How many miles per year will these trucks travel and how many septic tanks will they serve per day? W-33

18. Oxidation ponds are listed on page II-11. They are not allowed by the Florida Department of Environmental Regulation. Do you feel otherwise? W-34

19. Items 2 & 4 toward the bottom of page II-19 report the need of "sufficient depth to bedrock... and relatively flat land" for septic tank drainfields. At the bottom of the next page, it is reported that "in the unsewered portions... the terrain is irregular... many of these areas have shallow bedrock?" Isn't this inconsistent with the EIS advice to use septic tanks? If not, why not? W-35

20. Page II-24 lists sand filters and aerated lagoons. The Florida Department of Environmental Regulation doesn't permit these. Do you feel otherwise? W-36

21. At the bottom of page II-28, a disadvantage of a pressure system is listed as a higher concentrated wastewater. Please explain how under Florida rules that this is a problem. W-37

22. Who with the St. Joe Paper Company has approved the revised routing the EIS shows on figure II.7 for the proposed force main? We suggest they will not allow the routing you suggest. An answer which is not implementable is not an answer. W-38

23. On Page II-46 an assumption is made in Item 1 that the City will not independently finance beyond 17.5 MGD... On what do you base this assumption? On that same page in Item 4 an assumption is made that development densities will be limited to three units per acre. What is this assumption based on? W-39

24. On Page II-50, please explain "cost-effective (... environmentally)". W-40

25. On Page II-53, the words "with Federal funds" should be added to the first sentence.

Paragraph number two reports "urban runoff could increase" while paragraph number five reports "runoff will be less". Which is correct? What evidence is there of the EIS considering runoff from over saturated drainfields? W-41

26. Under "Alternative IV" which begins on Page II-53, several headings are missing which were listed under other alternatives. Why weren't the following headings listed?

A. Surface water quantity - Will there be no runoff due to saturated drainfields? If not, why not? What is the source of your information? W-42

B. Aquatic ecosystems - Will septic tank runoff not get into these systems? If not, why not? What is the source of your information? W-43

C. Terrestrial ecosystems - Will the cumulative area of drainfields not require "permanent dedication of additional acreage"? If not, why not? W-44

D. Population - Is the answer not the same as on Page II-55? If not, why not? W-45

E. Recreation - Was yard recreation considered? A big recreation form in Tallahassee is gardening. In a ¼ acre lot, half the back yard is taken up with the initial drainfield. What is the minimum separation needed between drainfields and vegetable gardens? W-46

F. Transportation - If the presumption of less dense population is true, longer roads will be needed to get out to the less dense areas. Why wasn't this considered. If it was, where is it? W-47

G. Soils - "Soils may clog due to suspended solids in the effluent ... and disposal efficiencies may be impaired" (pII-57). Would this not also be the case for septic tanks? If not, why not? W-48

H. Natural resources use - "Any potential recycling of nutrients or benefits from growing crops are lost". (PII-57) Wouldn't this also be the case for septic tanks? If not, why not? Alternative "1A - modified", proposed by the City of Tallahassee proposed sprayfields. W-49

27. "Microbiology" by Pelczar & Reid states: "They (Septic tanks) cannot, however, be relied upon to eliminate pathogenic microorganisms carried in sewage. Consequently, it is imperative that the drainage from the tank be prevented from seeping into the drinking - water supply". Do you have reason to believe the pathogenic microorganisms are eliminated? If so, how? W-50

28. On Page II-54, under "Public Health" there is no mention of possible contaimination of drinking water wells. Why not? W-51

On Page viii a "Pros" claim is "least impact on groundwater" and a "Cons" claim is "potential impact to groundwater". Which is it? Please explain. W-52

29. Reference Page II-55, under "Acquatic Ecosystems". What makes you believe the "existing degradation" is only applicable to Alternatives 1A & B? W-53

30. Reference Page II-55, under "Historic and Archeological Resources". Why reference anything listed as "not well documented"? W-54

31. Which State or Federal agency has established "species of special concern" for the gopher tortoise? Are you aware that the gopher tortoise is legal game under the State game agency? W-55

32. The gopher tortoise is listed as "species of special concern" on Page IV-31 and "threatened species" on Page IV-33. Which is it? What State or Federal agency has established that status? W-56

33. Where are the citrus groves listed on Page IV-51? Specific locations are requested. W-57

34. What is the source of your information that "the City's sewer collection system maps ... are neither accurate nor comprehensive enough for sufficient management of sewer system requirements"? Are you aware that the City has extensively documented these collection lines with in-line television tapes, lamping, written logs and controlled plan & profile maps? Please correct the DEIS to show the actual situation. These records will be made available in our offices. W-58

35. On Page IV-57, a statement is made that "Effluent (from the T.P. Smith Treatment Plant) is either discharged to Munson Slough, where it eventually enters Lake Munson or it is sprayed onto 120 acres of land surrounding the treatment facility". There are some basic things, such as effluent disposal points, that a technical report has no excuse of reporting in error. The EIS also implies that the Southwest Treatment Plant has the same disposal. This is a textbook example of the problems of reporting a situation from hundreds of miles away. Please investigate the disposal methods of these two plants and report them correctly. Along the same line, anyone visiting these plants would know the centrifuge was taken out of operation years ago. W-59

36. With reference to Table IV.19:

A. Under the paramenter "Noise", why isn't the sound of a septic tank pump out truck traveling all over town (and even up on lawns next to homes) equal or greater than the trucks listed which only cross the road between the sewage treatment plant and the airport? If not, why wouldn't it be? What farm machinery is being used for sludge? W-60

B. Under the parameter "Topography", why isn't earth moving to install numerous septic tanks, drainfields and absorption beds considered? W-61

C. Under the parameter "Soils", why wasn't the "soils clogging" under alternative #1 listed under alternative #4? Do you feel the drainfields will not clog? If so, why? W-62

D. Under the parameter "Surface Water Quality", when and where in Leon County was the "overland runoff or lateral seepage to nearby surface water bodies from sprayfields and sludge disposal sites"? There is ample experience of both sprayfield and sludge disposal operations in Tallahassee to forecast that the past record is an indication of what can be expected in the future. If this experience was not considered, why wasn't it? W-63

E. Under the parameter "Surface Water Quality", why do you feel the N.E. population will change its density to match the wastewater treatment method? If so, explain why. W-64

F. Under the parameter "Groundwater Quality", what is your source of information that alternative #4 will have a minimum impact? W-65

G. Under the parameter "Acquatic ecosystems", what is the source of contamination impacting protected species? What are the specific species? What Federal or State agency has labeled them "protected"? Who, by name, of the EIS team can vouch for the local existence of these species? W-66

H. Under the parameter "Terrestrial ecosystems", why aren't "habitat losses" due to clearing "natural vegetation" lots for septic tanks and drainfields considered? Why won't there be sludge disposal sites for septic tanks? If you feel there will not be sludge from septic tanks, please explain why. W-67

I. Under the parameter "Land use", why will there be no sludge disposal sites for septic tanks which will "convert several hundred acres from agricultural/forestry to cropland"? What is the difference between agricultural land and cropland? W-68

J. Under the paramenter "Public Health", why do you list as an impact "transmission of pathogens from sprayfields by wind or vectors" when on page II-59 you state "public health impacts are negligible from spray irrigation..."? What is spray irrigation as it is now being practiced on over 1000 acres by the City of Tallahassee, a public health impact or a negligible factor? W-69

K. Under the parameter "Archeological and historical resources" why do you feel there will be more destruction under alternatives #1, 2 & 3 as compared to alternate #4? In your answer, consider the Federal requirements for archeological and historical surveys before construction of EPA wastewater facilities and no requirement for such surveys under a "No Federal Action" plan. Also consider the greater surface area disturbed by the numerous septic tanks and drainfields compared to a central facility. W-70

L. Under the paramenter "Recreation", where is the public hunting areas which will be lost to land conversion? We hope you are not considering protecting private land and its interest instead of the public's welfare. What other county in Florida has over 100,000 acreas of publicly owned hunting area? W-71

M. Under the parameter "Natural resource use", where is the forestry activity in the N.E. which would have a significant impact by alternative #1? W-72

37. Please give the number of working hours (±15%) that the following personnel spent on this project while in Leon County:

U.S. Environmental Protection Agency

Robert B. Howard, Chief, EIS Preparation Section
W. Bowman Crum, Current Project Officer
Richard D. Green, Prior Project Officer
Virginia W. Buff, 201 Project Engineer

Gannett Fleming Corddry & Carpenter, Inc.

Thomas M. Rachford, Senior Project Manager
Albert T. Bain, Project Manager
Mark Flaherty, Environmental Engineer W-73
Jim Fuller, Environmental Engineer
Sara Frailey, Environmental Engineer
John W. Jacobs, Environmental Scientist
Richard C. Callahan, Environmental Scientist

Claude Terry & Associates, Inc.

Claude E. Terry, Project Executive
Louise B. Franklin, Project Manager, Environmental Planner
Robert J. Hunter, Environmental Scientist
Thomas C. Mather, Environmental Scientist
James C. Hodges, Environmental Scientist
A. Anita Patterson, Environmental Scientist

38. Please give a drawing showing the layout of an on-site disposal system for a 1/4 acre lot including any areas required for drainfield expansion following the rules of the Department of Health and Rehabilitative Services Health Programs Chapter 10D-6 Standards for Individual Sewage Disposal Facilities. W-74

The on-site disposal system should be sized based on the following criteria which is common for northeast Leon County:

> 1400 sq. ft. home, 3-bedroom, washer, garbage disposal, 15 minute percolation rate, and yard elevations falling 3 feet from front to back. Also consider Leon County setback rules and the following from septic tank rule 10D-6.24(6): "Suitable, unobstructed land shall be available for the installation of drainfields and/or absorption beds. The minimum absorption area shall be no less than three (3) times the drainfield absorption area required by Section 10D-6.26 and shall be in addition to that required in subsection three (3) above." Also, please show where a small vegetable garden would go (keeping good health practices in mind). If a vegetable garden is not feasible in a situation of this sort, please explain why.

39. Alternative IV cost estimates shown in Table I.3.3. of the Draft Alternatives Evaluation Volume I- Summary and Table II.18 (II-51) of Environmental Impact Statement - Draft do not agree. There is a $700,000 differential in the "No - Federal - Action" column and neither upper column is added correctly. Please explain. W-75

40. Page III-10 of the EIS Draft states in the section on regulations that "percolation rates as slow as 60 minutes per inch have been shown to be effective because such percolation rates can be compensated for with lower loading rates" ... and later, "Presently, soil absorption beds are sized on the number of bedrooms in the residential home instead of the ability of the soil to absorb septic tank effluent."

First a 60 minute perk would be compensated for by a larger drainfield, not telling the family they have to use less water.

Secondly, soil absorption areas are sized on the number of bedrooms and the percolation rate. Please explain why the EIS says otherwise? W-76

41. The EIS assumes that development densities for on-site systems will be three units per acre. This is wrong as on-site systems are allowed and are being constructed on ½ acre lots. Please explain why the EIS states three units per acre. W-77

42. It is common knowledge to Florida wastewater engineers that Duval & Orange Counties have very serious problems which have developed due to on-site & community systems. What makes you feel that a similar situation would not develop in Leon County? W-78

43. The State requires that local governments cooperate and publish a policy document entitled the "Local Government Comprehensive Plan" (LGCP). The LGCP calls for higher population densities in and near the central city to cut down on the length of utility runs and roads. The DEIS calls for less dense population thru spreading out of communities. Since the EIS branch has a copy of the LGCP, why is the EIS suggesting a direction counter-current to local & State government planning? W-79

44. What is the source of the information shown on figure IV.10? W-80

45. Why wasn't the alternative "Modified la" as described in recent City correspondence evaluated in the DEIS? W-81

46. In light of high energy costs & the high cost of urban services, why are you promoting urban sprawl. In your answer, please give consideration to transportation, fire protection, garbage and similar services. W-82

47. Were the costs of wells & sampling included in the cost effectiveness analysis of alternative IV? If not, why not? W-83

48. Should contamination be found in the drinking water wells, will EPA fund a study to determine how it can be remedied? W-84

On-Site Wastewater Mangement
District Responsibilities

The EIS recommends the use of on-site wastewater disposal systems for most future developments in Leon County. This has the effect of shifting some of the responsibility for wastewater disposal from the City to other agencies.

Concerning on-site systems the EIS states the following: "Operation and maintenance problems as well as siting and construction inadequacies are cited as reasons for doubting the effectiveness of on-site systems in growth areas. These are considered to be institutional problems that can be overcome."

Institutional problems are not easily overcome. They usually prove more difficult to solve than engineering problems. If a management district fails to overcome the institutional problems, it will be individual homeowners who suffer, not the district. Following are some of the institutional problems each district will have to face:

1. Any measures implemented by a district which would increase the cost of septic tanks and drainfields will be met by strong opposition from developers.

Each district will be the homeowners sole line of defense against developers who want to "get in and get out" at the lowest cost. A new septic tank and drainfield, even if poorly designed, will probably work fine for a year or so; or at least beyond normal warranty periods. W-85

Developers will place tremendous pressure on each district to allow development of marginal areas for septic tanks.

2. The EIS recommends that management districts regulate the design, construction, operation and maintenance of on-site disposal systems, and lists the services which need to be provided. Where will the money come from to regulate on-site disposal systems? Certainly, developers will strongly resist any increase in permit fees. W-86

3. Districts must change their attitude from viewing drainfields as temporary systems to viewing them as permanent systems. See the attached memorandum from the Leon County Health Department. W-87

4. Drainfields which must last 40 years will require reworking of existing design rules. Flexibility in design from lot to lot will be needed; and this goes directly against regulators who try to make everything "fit in one slot". W-88

5. Can a district be sued when a district approved septic tank and drainfield design fails? W-89

6. Possible districts have little or no experience with package plant designs, operation and maintenance, or the design of sewer lines, pumping stations, and force mains which feed the package plants. They will have to train or hire new personnel to adequately regulate these facilities. W-90

Do you feel the responsibilities are valid? If not, why not?

O. J. Keller, Jr., Secretary
Reubin O'D Askew, Gov.
DIVISION OF HEALTH . . . . . . E. CHARLTON PRATHER, M.D., M.P.H. DIRECTOR
Leon County Health Department
2965 MUNICIPAL WAY
P. O. BOX 2745
TALLAHASSEE, FLORIDA 32304
TELEPHONE (904) 576-1216
B. E. BENNISON, M.D., M.P.H.
DIRECTOR

201 Prog
10/23/8

May 8, 1975

MEMORANDUM

TO: B. E. BENNISON, M.D., DIRECTOR

FROM: GEORGE M. BOYD, R. S., DIRECTOR
DIVISION OF ENVIRONMENTAL HEALTH

SUBJECT: SEPTIC TANK AND OTHER ENVIRONMENTAL PROBLEMS SURVEY
IN THE ROBINHOOD ROAD AREA

The above named survey was conducted on April 30, May 1 and 2, 1975 by personnel of this department with assistance from the State Department of Pollution Control and other county departments.

The area surveyed was bounded by State Road I-10 on the South, Meridian Road on the East, Lake Jackson and Meginnis Arm on the North and West.

A total of 387 homes was surveyed and 38 of them (roughly 10%) were found to be having some present problems with their septic tank and drainfield.

The problems appeared to be confined within the boundaries of said lot with the exception of odors. All the problems cound be eliminated temporarily by repairing the drainfield.

The average age of the homes in the area is 4½ years and a majority of the homes have experienced some degree of difficulty with their septic tank and drainfield in the past. This is understandable since a septic tank and drainfield is only a temporary expedient for sewage disposal until a severage system can be made available and must be maintained periodically in order to function properly.

We were unable to obtain the necessary data to arrive at an average home-owner expenditure per year on septic tank and drainfield in this area but the national average for this expenditure was $154.00 per year back in 1965.

Reasons Why the EIS Cost Estimates for Alternative IV are too low

1. Cost estimates were based on current septic tank designs which have proven to be inadequate as permanent facilities. Can you show that costs were considered for facilities more adequate than the State's "minimum standards"? W-91

2. The EIS lists many functions to be performed by the management district responsible for the on-site systems. Can you show where costs for these services were included in the estimates? W-92

3. The design life of houses is 50± years, therefore the drainfields should last this long. No drainfield constructed in clay soil can function for 50 years unless grossly overdesigned initially. Can you show where the EIS included costs for periodically rebuilding the drainfield? W-93

4. We consider a drainfield as "lost land" which has a value. The loss would be to natural vegetation, animal habitat if left alone or to recreation such as gardening if cleared. Do you agree? If not, why? W-94

5. Small community systems (package plants) are described as the most expensive wastewater treatment system per gallon of water treated, and they play an integral part of Alternative IV. However, the costs of these systems are left out of the 17.7 million dollar figure. Can you show this is not the case and give a cost break down with a source reference? How many package treatment plants does this allow for? W-95

Reasons for Reopening the EIS

For Alternative IV to prove to be the most cost effective and environmentally sound wastewater disposal method, will depend on many factors. The most important being the ability of the managment districts to adequately regulate the design, construction, and maintenance of on-lot disposal systems. Unfortunately, it will be several years before any judgments can be made as to how well the districts are doing the job. This being the case, we feel the EIS should be reopened in 3 years should some of the following occur:

1. Homeowners make numerous complaints about failing drainfield systems.

2. Evidence is found of developers using their political influence to construct drainfields in marginal areas which are doomed to failure.

3. Districts fail to perform the tasks recommended by the EIS for the management district. These tasks are:
    a. Revision of basic rules governing septic tank use to allow for systems more suited to current and future demands. These revisions should include siting criteria, basic system design, and the use of alternative systems.

    b. The implementation of on-site systems management to promote the efficient operation of on-site systems.

    c. Monitoring of groundwater quality in the developing areas of Leon County to ensure early detection of groundwater contamination.

4. EIS cost estimates for on-lot disposal systems prove to be substantially low due to the expense of permanent on-lot disposal systems constructed in clay soils.

5. Districts are unable to adequately regulate small community systems.

6. Local wastewater treatment plants fail to meet Florida Department of Environmental Regulation rules.

7. Florida Department of Environmental Regulation allowing the use of trickle filter plants without filtration for spray irrigation. This would substantially lower the EIS cost estimates for Alternatives I, II, and III.

Do you feel the EIS should be reopened if any of these seven items occur? If not, which items or combinations of items would warrant a reopening of the EIS? W-96

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P. O. BOX 2288
MOBILE, ALABAMA 36628

Hildreth/rwr/FTS 537-4141

REPLY TO
ATTENTION OF:
SAMPD-EE

13 November 1981

Mr. John E. Hagan III, P.E.
Chief, EIS Branch
EPA, Region IV
345 Courtland Street, NE
Atlanta, GA 30365

Dear Mr. Hagan:

We have reviewed the Draft Environmental Impact Statement for Tallahassee-Leon County Wastewater Management, Tallahassee, Leon County, Florida. The statement appears adequate concerning matters related to the responsibility of this office. We have no specific comments to offer. W-97

Thank you for the opportunity to review the statement.

Sincerely,

Willis E Ruland
WILLIS E. RULAND
Chief, Environment and Resources Branch

ENVIRONMENTAL IMPACT STATEMENT
BRANCH
RECEIVED
NOV 16 1981
REGION IV - EPA

(404) 262-6649

November 13, 1981

Mr. John E. Hagan, III, P.E.
Chief, EIS Branch
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Dear Mr. Hagan:

We have reviewed the Draft Environmental Impact Statement (EIS) for the Tallahassee-Leon County Wastewater Management 201 Facilities Plan (Phase 2), Tallahassee, Florida. We are responding on behalf of the Public Health Service and are offering the following comments for your consideration in preparing the final document.

We understand that Alternative 4 (No-Federal Action or Limited-Federal Action) has been selected to be the preferred alternative because it is considered by EPA to be the most effective and environmentally sound alternative. Since this alternative for disposal of sewage effluent would be handled by a variety of on-site treatment systems, we believe the local zoning and building inspection agencies must have satisfactory regulatory authority to prohibit the construction of on-site systems on lands which would be unsuitable. W-98

A determination of suitability would depend upon many factors including: land use, density of on-site systems, slope, soil type, permeable soil depth above water table, soil clogging, minimum lot size, proximity to water bodies and watercourses, springs and karstic features, and location of other on-site systems, water supply lines, and/or wells. Are all these factors considered by the Leon County Health Department in approving new on-site systems? What authority does the Leon County Health Department and other county agencies have in regulating and monitoring the construction and management of on-site sewage treatment systems? W-99 Do any regulations exist for installing private wells or other on-site drinking water supplies? What local standards exist for satisfactory casement and monitoring of private and public wells for drinking water? W-100

Several control methods and installation procedures for on-site systems are recommended in EPA's Polluted Groundwater: Some Causes, Effects, Controls and Monitoring, EPA-6001 4-73-0016, July 1973. These should be discussed in the EIS and, where applicable, recommended for implementation by the local health department to prevent long-term failure of on-site systems and degradation of groundwater. Where local regulations for regulating on-site treatment systems are unsatisfactory, we believe local authorities should be required to adopt appropriate regulations for approving on-site systems before funds are released for other eligible elements under Alternative 4 of the Phase 2 Facilities Plan. W-101 While we fully support the "primary recommendations" listed on page IX of the EIS to mitigate potential impacts associated with Alternative 4, we believe these measures should be subject to EPA's review and approval.

It is indicated on page III-5 that "travel through two to four feet of unsaturated soil will provide adequate removals of pathogenic organisms and other pollutants from the wastewater." Please provide references of research that document this viewpoint. It should be recognized that "adequate removals" W-102 depend primarily upon the soil's physical and hydrologic characteristics. We believe the statement quoted above should be revised with qualifiers such as "suitable" and "may." Our experience, as well as an examination of the literature, reveals many cases where pathogens and/or pollutants have migrated considerable distances through subsurface soils and strata to contaminate potable groundwater sources. The four-foot limitation associated with "unsaturated soil" (see above) usually refers to satisfactory retainment of sewage effluent in the drain field below the ground surface. According to the Report to Congress, Waste Disposal Practices and Their Effects on Groundwater, January W-103 1977, two criteria have been successful in keeping septic tank effluent below the ground. These criteria require: a minimum 4-foot separation between the bottom of the seepage system and the maximum seasonal elevation of groundwater, and a reasonable thickness, usually 4 feet, of relatively permeable soil between the seepage system and the top of an impervious soil or rock formation.

The types of septic tank system failures that have been documented by the Leon County Health Department should be described. W-104 Have any of these failures been associated with: standing pools of sewage or effluent where direct human contact is likely, sewage in basements, or contamination of private wells and/or surface waters used for water supply purposes?

We appreciate the opportunity to review the Draft EIS. Please send us one copy of the final document when it becomes available. Should you have any questions about our comments, please call Robert Kay of my staff at FTS 236-6649.

Sincerely yours,

Frank S. Lisella, Ph.D.
Chief, Environmental Affairs Group
Environmental Health Services Division
Center for Environmental Health

ENVIRONMENTAL [illegible] STATEMENT
1981
EPA

United States Department of the Interior
OFFICE OF ENVIRONMENTAL PROJECT REVIEW
Southeast Region / Suite 1384
Richard B. Russell Federal Building
75 Spring Street, S.W. / Atlanta, Ga. 30303

ER-81/1983

November 16, 1981

Mr. John E. Hagan, III
Environmental Protection Agency
345 Courtland Street, NE
Atlanta, Georgia 30365

Dear Sir:

We have reviewed the Draft Environmental Statement, Tallahassee-Leon County Wastewater Management, Leon County, Florida, and have the following comments.

General Comments

In general the draft statement is well written and recognizes fish and wildlife resources and their habitats. Adequate consideration has also been given to mineral activity within the study area. The statement does a good job discussing alternatives and impacts of the proposed work. W-105

Specific Comments

Page IV-25, paragraph 3. The fish fauna found within the project area should be listed in the draft document. Although such a list is found in the 201 Plan, many reviewers may not have access to the document. W-106

Summary Comments

The Fish and Wildlife Service is in agreement with the selection of alternative 4 (No-Federal-Action) as the preferred alternative. W-107

Thank you for the opportunity to comment on this document.

Sincerely,

James H. Lee

James H. Lee
Regional Environmental Officer

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
ATLANTA REGIONAL OFFICE
RICHARD B. RUSSELL FEDERAL BUILDING
75 SPRING STREET, S.W
ATLANTA, GEORGIA 30303

REGION IV

November 23, 1981

IN REPLY REFER TO:
4C

John E. Hagan III, P.E.
Chief, EIS Branch
EPA, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Dear Mr. Hagan:

Reference: Tallahassee-Leon County, Florida
201 Area Draft EIS

We have completed our review of the referenced Draft EIS, and wish to offer the following comment.

HUD's concern in this matter relates to the selection of the preferred alternative. For many years HUD has discouraged new growth development in areas using "on-site" sewerage disposal systems. Requests for mortgage insurance have been denied because the sewerage disposal methods were "on-site" systems. "On-site" systems can only be considered for FHA mortgage insurance in residential development proposals if establishment of a central collection and treatment system, or connection W-108 to an existing system has been found economically and/or physically infeasible. As a result, applicants for FHA mortgage insurance for new growth developments are encouraged to develop in those areas where central systems are available, or if their development is large enough to construct a central collection and treatment system for their project. The preferred alternative selected by EPA may therefore limit the availability of FHA mortgage insurance in the Tallahassee-Leon County area.

Thank you for affording us with the opportunity to review and comment on this DEIS.

Sincerely,

Clifton G. Brown
Regional Administrator

ENVI... STATEMENT
RECEIVED
NOV 25 1981
REGION IV · EPA

AREA OFFICES
ATLANTA, GEORGIA · BIRMINGHAM, ALABAMA · COLUMBIA, SOUTH CAROLINA · GREENSBORO, NORTH CAROLINA · JACKSON, MISSISSIPPI
JACKSONVILLE, FLORIDA · KNOXVILLE, TENNESSEE · LOUISVILLE, KENTUCKY

1808 Old Briar Trail
Tallahassee, Florida 32304
November 25, 1981

Mr. John E. Hagan III, P.E.
Chief, EIS Branch
EPA, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Dear Mr. Hagan:

We are writing to reiterate our support for the alternative selected regarding the recommended spray irrigation site in the Tallahassee Environmental Impact Statement. As we stated at the public hearing on November 5, 1981, we believe the consultants recommendation that the sprayfield be placed in an isolated area is far more sound than putting a sprayfield in close proximity to populated neighborhoods. Leon County has an abundance of nondeveloped land which is suitable for spray irrigation. There is no need to subject the citizenry to the possibility of ground water and odor pollution, transmittal of virus, bacteria, parasites, etc., not to mention the depreciation of property values. We have heard far too many horror stories of the after effects of pollution to feel secure with allowing the placement of such a facility near our homes and simply do not see the necessity for taking such a chance if there is an alternative solution. W-109

We would also like to take this opportunity to thank the officials conducting the Tallahassee EIS. While we have always argued that the Review Committee was too heavily stacked with officials of the City of Tallahassee, the various EIS authorities have continually been willing to meet with us and listen to our concerns. We will be eternally grateful for their attention to those concerns.

Sincerely,

Jessie Brown

Glenn Carter, President
Munson Area Preservation, Inc.

Jessie Brown, Secretary/Treas.
Munson Area Preservation, Inc.

cc: Claude Terry & Associates, Inc.
Gannett Fleming Corddry & Carpenter, Inc.

ENVIRONMENTAL IMPACT STATEMENT
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DEC 03 1981
REGION IV EPA

United States
Department of
Agriculture

Soil
Conservation
Service

P. O. Box 1208
Gainesville, FL 32602

Subject: EVT - Draft Environmental Impact Statements

Date: November 30, 1981

To: John E. Hagan III, P.E.
Chief, EIS Branch
EPA, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

We have no comments on the DEIS for Tallahassee-Leon County Wastewater Management Plan.

Jesse B. Livingston (Acting)
James W. Mitchell
State Conservationist

W-110

cc: Norm Berg, National Office, Washington, D.C.

ENVIRONMENTAL IMPACT STATEMENT BRANCH
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The Soil Conservation Service
is an agency of the
Department of Agriculture

SCS-AS-2
10-79

STATE OF FLORIDA

Office of the Governor

THE CAPITOL
TALLAHASSEE 32301

BOB GRAHAM
GOVERNOR

December 2, 1981

Mr. John E. Hagan III, P.E.
Chief, EIS Branch
EPA, Region IV
345 Courtland Street, NE
Atlanta, Georgia 30365

Dear Mr. Hagan:

In reference to your Draft Environmental Impact Statement for Tallahassee-Leon County Wastewater Management, Tallahassee, Leon County, Florida, please be advised that we have circulated these documents to the concerned state agencies for their review and comment.

Attached for your consideration are comments submitted by the Department of Veteran and Community Affairs and the Department of Natural Resources. No other substantive comments have been received to date regarding this document. However, the Department of Environmental Regulation may submit comments at a later date. The Department of Veteran and Community Affairs does raise several valid concerns regarding the project, specifically potential impact on the local government's financial capabilities. We strongly suggest that this issue and others raised by the Department be given serious consideration in developing your final document. W-111

Thank you very much.

Sincerely,

Walter O. Kolb
Sr. Governmental Analyst

WOK/jkc

cc: Mr. John Burke
Mr. John Outland
Mr. Art Wilde
Mr. Brad Hartman

ENVIRONMENTAL IMPACT STATEMENT
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REGION IV - EPA

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STATE OF FLORIDA
DEPARTMENT OF VETERAN AND COMMUNITY AFFAIRS
OFFICE OF THE SECRETARY

BOB GRAHAM
Governor

JOAN M. HEGGEN
Secretary

November 6, 1981

Mr. Walter B. Kolb
Senior Governmental Analyst
Executive Office of the Governor
The Capitol
Tallahassee, Florida 32301

Dear Walt:

SUBJECT: Draft Environmental Impact Statement for
Tallahassee-Leon County Wastewater Management
SAI-FL8109230442E

A Department of Veteran and Community Affairs' staff review of the referenced project was based on the agency's advocacy of the viability of Florida's local governments and on our awareness and knowledge of their operations. In that context, this Department wishes to bring several matters to the attention of the Environmental Protection Agency.

One basic concern overrides all others in our review and analysis of the Environmental Impact Statement Preferred Alternative: namely, inadequate discussion of the implications of No-Federal-Action in regard to Leon County's wastewater treatment system. On pages ix, II-22 et. seq. and III-10, statements alluding to the methods for coping with weaknesses of small community systems or septic tank wastewater disposal seem to overlook a number of implications.

For example, the pressures for keeping costs of local government as low as possible are leading to reductions of service levels, not increases. Little in the way of resources are available in Leon or other counties or municipalities for the level of staffing required to do groundwater monitoring, not to mention enforcement of the nature and extent required here. Evidence of this lack of resource is implicit in numerous Leon County public works programs, including road maintenance, storm drainage, tree ordinance enforcement, and so on. Consultants for the Draft Environmental Impact Statement show little understanding of local government capability in today's budget-squeezed world. W-112

2571 EXECUTIVE CENTER CIRCLE, EAST • TALLAHASSEE, FLORIDA 32301 (904) 488-8466

Furthermore, there is apparent lack of appreciation for the strict administrative procedures under which Florida agencies operate. The Draft Environmental Impact Statement states that the employees of a proposed special district government could go on private property (a small sewer system treatment plant) and put the system in working order when it malfunctions. Only the most exacting definitions of malfunctions specifically directed toward each case would allow such activity without the delays of an administrative hearing. Who is to pay for the entire process? W-113

Finally, staff members of this Department have witnessed the coming of the wastewater disposal day of reckoning in several urban counties in Florida, specifically Escambia and Duval Counties, where package plants deteriorated and eventually were purchased by the local government at the insistence of the residents. That situation could be repeated in Leon County if the Environmental Protection Agency's recommendation is adopted. W-114

The Department of Veteran and Community Affairs wishes to see more attention paid to the disadvantages attendant to the implementation of proposed alternative (4) in management terms.

Sincerely,

John G. Burke
Assistant Secretary

JGB/DP/sg

State of Florida

Department of Natural Resources Interoffice Memo.

November 19, 1981

TO: Art Wilde
Contracts and Fixed Capital Outlay Coordinator

FROM: Ted Forsgren, Chief
Bureau of State Lands Management
Division of State Lands

SUBJECT: SAI #FL8109230442E, DEIS for Tallahassee - Leon County Wastewater Management

The material provided is too general for us to do a detailed review of state-owned lands involvement in this proposal.

If state-owned lands are involved, approval must be obtained from the Board of Trustees of the Internal Improvement Trust Fund for their use. W-115

The material provided us is returned herewith.

TF:hhc
Attachment

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
300 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

December 3, 1981

Mr. John E. Hagan III, P.E., Chief
EIS Branch, EPA Region IV
U.S. Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Re: C120581010 (Step 1) - City of Tallahassee
Tallahassee-Leon County EIS

Dear Mr. Hagan:

The Florida Department of Environmental Regulation has completed its review of the above referenced Environmental Impact Statement (EIS) and adds the following comments to those previously submitted September 30, 1981:

1) The recommended on-site disposal alternative has potential for contamination of potable groundwater supplies, since in many areas the overburden may not be adequate to protect the resource. Also, some surface water areas may discharge directly into the Floridan Aquifer through sinkholes. W-116

2) The planned use of septic tanks may be satisfactory for a rural setting but these systems are inappropriate for high density developments. The soils suitability map for the 201 project areas, which shows all of the northern area of the county acceptable for septic tank use, is questionable. In view of the variation in soils, suitability would have to be confirmed by individual percolation tests. W-117

3) Small package wastewater plants can create problems in the long run. Operation and maintenance of these small facilities is generally not of the same quality as for regional systems. In many instances, this inadequately and/or inconsistently treated waste will be disposed of in percolation ponds which have the potential for rapid transmission into the ground water resource. In the regional systems adequate monitoring usually demonstrates the effectiveness of treatment and disposal by land application. W-118

4) It may not be economically feasible to provide interceptor sewers for collection of the waste due to the population density at this time; however, planning should certainly continue to provide this service in the future. W-119

> Unless planning is carried out and guidance given to future development, Leon County may experience the same problems with growth that other counties have experienced.

In summary, the plan as outlined will take some rigid controls if the small systems are collectively going to function as efficiently as one or two large spray irrigation sites with centralized treatment. The selected alternative leaves some doubt as to whether adequate protection of the groundwater will be provided. W-120

If you have any questions/comments please contact me at 904/488-2582.

Sincerely,

Richard W. Smith

Richard W. Smith, P.E., Chief
Bureau of Wastewater Management and Grants

RWS/vhj

cc: Michael Schneider - City of Tallahassee
David Peacock - EPA
Richard Sublette - DER/Pensacola
Al Bain - Gannett Fleming

ENVIRONMENTAL IMPACT STATEMENT
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REGION IV

HURLEY W. RUDD
MAYOR-COMMISSIONER

JAMES R. FORD
MAYOR PRO TEM-COMMISSIONER

CAROL BELLAMY
COMMISSIONER

[illegible] SPRIGGS
COMMISSIONER

SAMUEL E. TEAGUE
COMMISSIONER

CITY of TALLAHASSEE
FLORIDA

CITY HALL
32301

DANIEL A. KLEMAN
CITY MANAGER

HERBERT J. SECKEL
CITY AUDITOR-CLERK

BRYAN W. HENRY
CITY ATTORNEY

TELEPHONE
(904) 599-8100

December 4, 1981

Mr. John E. Hagan III, P.E.
Chief, EIS Branch
EPA, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Attention: Mr. Bo Crum

Dear Mr. Hagan:

Please add the following comments to our earlier submittal.

A. On page III-4 of the Draft Environmental Impact Statement a primary impact of fifteen stream crossings is reported in the sixth paragraph. A primary impact implies a big problem, therefore I asked for a map showing the crossing points. The contractor sent a map and a letter which reduced the fifteen crossing to ten.

W-121

On November 13, 1981, Mr. Bob Ballard and I made a field check of the area depicted by the Gannett-Fleming map.

On that map, I have labeled their ten crossings "A" thru "J". The sites where photographs were taken are labeled with Roman numberals "I" thru "IX". In three locations (VI, VII & IX) photographs were made at road crossings as the lack of any flow under the road indicated there wouldn't be any flow found up or down the dry bed.

Please be advised that it is no problem to write into a construction contract the provision that cuts made for laying pipe be dug in dry weather only. This is specifically what we would do in this situation.

The following conditions were found at sites "I" thru "IX" as labeled on the enclosed map and documented by the enclosed photographs which are similarly keyed.

I. On the south side of the road a one quarter inch trickle of water was coming out of the metal conduit. On the north side of the road dirt blocked the bottom one inch of the box culvert preventing any flow whatsoever. The conclusion is that a non-moving puddle was found on the south side of the road and no flow under the road. The puddle was approximately 5' x 8'.

II. On the south side of the road was a non-moving puddle with no water inlets or outlets. On the north side of the road was dry land where Bob is shown. The box culvert had less than one inch of water in the south end and no water in the north end. The conclusion is that there is no flow at this point.

III. In the photographs it can be seen that there is no flow on either side of the railroad trestle. A stagnet puddle can be seen on the south side. The conclusion is that there is no flow at this point.

IV. In the photographs tire tracks can be seen crossing under the trestle. There was a very slow northerly flow in the tire tracks. Please note the flow direction. The conclusion is a very small flow.

V. In the photographs one can see Weems Pond which is not a good crossing point. If the line crossed on the other side of the road, a very small flow would be encountered. There is less than one inch of water in the three 48" conduits. The conclusion is a very small flow.

VI. These photographs show the dry box culvert which indicates no flow. Also shown is a puddle on the south side which stops at the fence. The conclusion is no flow at the road and little chance of flow at "F" or "G".

VII. These photographs show no flow whatsoever under Miccosukee Road. The conclusion is that there is little chance of flow at "H" as none passes under the road.

VIII. These photographs show a two inch flow in the 48" pipe nearest Bob. There was no flow in the other two pipes. The conclusion is that, while this is the largest flow found, it would not be difficult to protect while laying a pipe line.

IX. These photographs show dry ground on either end of the culvert which passes under Thomasville Road. The conclusion is that there is no flow under the road and little chance of flow at "J".

The situation might be summarized by stating that there is only a very small flow at three of what was reported in the DEIS to be fifteen streams. The cumulative flow of the three "streams" is estimated to be one gpm. I do not feel this situation is significant enough to be reported in an EIS as a primary impact, do you? If you do feel it is significant please explain why you feel that way. Please keep in mind we would only construct the lines during dry weather. Had we not field checked this situation, most readers would have had no trouble "picturing" the never to be doubted EIS description of fifteen streams.

B. The EIS, on several occassions when discussing the suitability of on-site wastewater disposal systems for Leon County, referred to a publication by Richard L. Guthrie and Gerald J. Latshaw entitled "Soil-potential ratings for septic tank absorption fields in Leon County, Florida". This publication gives a "High" rating for septic tank absorption fields to the most common soils found in northeast Leon County (e.g. Lucy, Norfolk, and Orangeburg soils, see general soil map). W-122

I feel that this report gives a false sense of security to persons unfamiliar with the soils in this County and is inaccurate. Our comments on the soil conditions in northeast Leon County and the soil potential ratings publication follow:

I. The source for our information is the Soil Survey of Leon County by the United States Department of Agriculture Soil Conservation Service and Forest Service, 1979.

A review of soil maps contained in the survey reveals that the Orangeburg, Lucy and Norfolk soils are the most common soils found in northeast Leon County. A description of these soils follows:

Orangeburg-Lucy-Norfolk, Page 9

These are nearly level to strongly sloping, well drained soils; some are loamy throughout; some are sandy to a depth less than 20 inches and loamy below; some are sandy from 20 to 40 inches and loamy below.

The map unit which includes these soils is the largest unit in the county and occupies most of the northern sector. The City of Tallahassee and the Lake Jackson area are in this unit.

This unit consists of nearly level to gently sloping soils on uplands in most areas but consists of sloping to strongly sloping soils in drainageways. There is a fairly well developed drainage system of creeks and branches. Many ponds and small lakes are scattered throughout the unit. The native trees include slash, longleaf, shortleaf, and loblolly pines, live oak, red oak, white oak, hickory, magnolia, sweetgum, dogwood, and an understory of woody shrubs and grasses.

This unit makes up about 112,800 acres or 26 percent of the county land area. It is about 60 percent Orangeburg soils, 13 percent Lucy soils, 5 percent Norfolk soils, and 22 percent soils of minor extent.

Orangeburg soils are well drained. Typically, the surface and subsurface layers are fine sandy loam. The upper 5 inches is brown, and the lower 5 inches is yellowish red. The subsoil, extending to 80 inches or more, is yellowish red and red sandy clay loam.

Lucy soils are well drained. Typically, the surface layer is dark grayish brown fine sand about 5 inches thick. The subsurface layer is dark yellowish brown, dark brown, and strong brown fine sand about 19 inches thick. The subsoil is yellowish red sandy clay loam to a depth of 80 inches or more.

Norfolk soils are well drained. Typically, the surface layer is yellowish brown loamy fine sand about 4 inches thick. The subsoil is brownish yellow and yellowish brown fine sandy loam and sandy clay loam to a depth of about 58 inches where it changes to strong brown and reddish yellow sandy clay. The substratum is mottled brownish yellow, strong brown, and gray sandy clay that extends to 80 inches or more.

Of minor extent in this unit are Blanton, Faceville, Wagram, Yonges, and Lynchburg soils and Urban land.

Many areas of this unit are in native trees. Some areas have been cleared for improved pasture, hay, and cultivated crops such as corn, peanuts, and soybeans. Some areas are in urban use.

II. Following are additional excerpts from the soil survey:

1. Sanitary Facilities, page 48.

Table 11 shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered slight if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; moderate if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and severe if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, depth to bedrock, and flooding affect absorption of the effluent. Large stones and bedrock interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health.

Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to effectively filter the effluent. Many local ordainances require that this material be of a certain thickness.

Table II. Sanitary Facilities, Page 115.

Soil Name	Absorption Field Limitations
Lucy 0-8 percent slopes	Moderate: Perks Slowly
Norfolk 2-8 percent slopes	Moderate: Wetness
Norfolk Clayey Substratum 2-8 percent slopes	Moderate: Perks Slowly
Orangeburg 2-8 percent slopes	Moderate: Perks Slowly
Orangeburg 8-12 percent slopes	Moderate: Perks Slowly, slope

2. Physical and Chemical Properties, page 52.

Table 15 shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Permeability refers to the ability of a soil to transmit water or air. The estimates indicate the rate of downward movement of water when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems, septic tank absorption fields, and construction where the rate of water movement under saturated conditions affects behavior.

Table 15 -- PHYSICAL AND CHEMICAL PROPERTIES OF SOILS-Page 130

Soil Name	Depth	Permeability
	In	In/hr
Lucy	0-30	6.0-20
	30-36	2.0-6.0
	36-80	0.6-2.0
Norfolk 2-8 percent slopes	0-8	6.0-20
	8-58	0.6-2.0
	58-80	0.6-2.0
Norfolk clayey substratum, 2-8 percent slopes	0-7	2.0-6.0
	7-14	2.0-6.0
	14-64	0.6-2.0
	64-80	0.06
Orangeburg 2-12 percent slopes	0-10	2.0-6.0
	10-80	0.6-2.0

III. The EIS included in their Preliminary Decision Paper an article by Richard L. Guthrie and Gerald J. Latshaw entitled "Soil-potential ratings for septic tank absorption fields in Leon County, Florida." In this article the authors rated the Lucy, Norfolk, and Orangeburg soils as having a "High" potential for septic tank absorption fields. We strongly question these ratings because of information shown in Table 2 of this article and its treatment of one of the most important factors in the reliability of drainfields - Permeability.

Following is Table 2 in its entirety:

Table 2: Worksheet for preparing soil potential ratings for septic tank filter fields on Norfolk loamy fine sand, 2 to 5 percent slopes, Leon County, Florida.

Evaluation Factors	*Soil and Site Conditions*	*Degree of Limitation*	*Effects on Use*	*Corrective measures*		*Continuing Limitations*	
				Kind	*Index*	*Kind*	*Index*
Flooding	None	Slight	None				
Water table depth	4-6 ft	Moderate	Possible contamination of groundwater	Additional labor because of difficulty in installing tank	1	Possible contamination of groundwater	3
Permeability	0.6-2.0 in/hr 10-15 min/in	Moderate	Failure of system	Enlarge field to 570 square feet	5	None	
pe	2-5 percent	Slight	Surfacing of effluent on lower slopes	Design and install system to distribute effluent in drain field	5	Surfacing of effluent on lower slopes	1
				Total	11		4

100 (performance standard index) − 11 (measure cost index) − 4 (continuing limitation cost index) = 85 (soil potential index)

Table 2. Worksheet for preparing soil potential ratings for septic tank filter fields on Norfolk loamy fine sand, 2 to 5 percent slopes, Leon County, Florida.

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				Kind	*Index*	*Kind*	*Index*
Flooding	None	Slight	None				
Water table depth	4-6 ft	Moderate	Possible contamination of groundwater	Additional labor because of difficulty in installing tank	1	Possible contamination of groundwater	3
Permeability	0.6-2.0 in/hr	Moderate	Failure of system	Enlarge field to 570 square feet	5	None	
	10-15 min/in						
Slope	2-5 percent	Slight	Surfacing of effluent on lower slopes	Design and install system to distribute effluent in drain field	5	Surfacing of effluent on lower slopes	1
				Total	11		4

100 (performance standard index) − 11 (measure cost index) − 4 (continuing limitation cost index) = 85 (soil potential index)

number of soils, and costs are variable. However, the advantages afforded by soil-potential ratings in applying local knowledge and technology easily outweigh their disadvantages and justify their preparation.

The ratings apply only to the local area in which they are developed; and although costs and corrective measures may change with time, the relative rating of each soil should remain the same.

The first step in developing soil-potential ratings is to identify the specific need for them. The next step is to identify the kinds of technical assistance needed in their preparation. An interdisciplinary team is important to ensure use of the latest information in determining corrective measures, continuing limitations, and relative costs. In the pilot project this team consisted of a septic tank installation contractor, planners, engineers, sanitarians, and soil scientists.

The land use for which the soil-potential is rated must be specific enough to guide preparation of the soil-potential index. Using local data modified from national guidelines (*1*), the Florida team prepared the following definition:

"A septic tank absorpton field is a single-family home sewage-disposal system that consists of a subsurface system of tile or perforated pipe that distributes effluent from a septic tank into soil. The system is expected to function year-round at the designated capacity without surfacing of effluent or pollution of ground water. A three-bedroom residence on a one-third-acre lot with public water supply or one-half-acre lot with private water supply, a 900-gallon septic tank with distribution box, 400 square feet of absorption field, and an installed cost of $800 are assumed."

Calculating the index

The index of performance or yield (P) numerically represents the performance of a benchmark soil. A standard such as 100 or, if appropriate, specific yield values can be used. All soils are measured against the same standards. In the pilot project, 100 was chosen as the value of P; therefore, SPI = 100 − (CM + CL).

Soil scientists and planners identified the soil factors affecting the proper function-

Table 3. Potential of soils in Leon County, Florida, for septic tank absorption fields.

Soil Potential Index	*Rating*	*Soil*
100	Very high	Alpin sand, 0 to 5 percent slopes
100	Very high	Kershaw sand, 0 to 5 percent slopes
100	Very high	Lakeland sand, 0 to 5 percent slopes
100	Very high	Troup fine sand, 0 to 5 percent slopes
96	Very high	Foxwood sand, 0 to 5 percent slopes
96	Very high	Ortega sand, 0 to 5 percent slopes
95	Very high	Kershaw sand, 5 to 8 percent slopes
92	High	Lucy fine sand, 0 to 5 percent slopes
91	High	Blanton fine sand, 0 to 5 percent slopes
91	High	Bonifay fine sand, 0 to 5 percent slopes
90	High	Faceville sandy loam, 2 to 5 percent slopes
90	High	Lucy fine sand, 5 to 8 percent slopes
90	High	Orangeburg fine sandy loam, 2 to 5 percent slopes
90	High	Wagram loamy fine sand, 0 to 5 percent slopes
88	High	Faceville loamy fine sand, 5 to 8 percent slopes
88	High	Orangeburg fine sandy loam, 5 to 8 percent slopes
88	High	Wagram loamy fine sand, 5 to 8 percent slopes
85	High	Faceville sandy loam, 8 to 12 percent slopes
85	High	Norfolk loamy fine sand, 2 to 5 percent slopes
85	High	Orangeburg fine sandy loam, 8 to 12 percent slopes
84	High	Norfolk loamy fine sand, 5 to 8 percent slopes
82	Medium	Chipley fine sand
79	Medium	Arents, 0 to 5 percent slopes
77	Medium	Leefield loamy sand
77	Medium	Lutterloh fine sand, 0 to 5 percent slopes
77	Medium	Ocilla fine sand
72	Medium	Norfolk loamy fine sand, clayey substratum, 5 to 8 percent slopes
71	Medium	Dothan loamy fine sand, 2 to 5 percent slopes
65	Medium	Fuquay fine sand, 0 to 5 percent slopes
64	Medium	Albany loamy sand
64	Medium	Fuquay fine sand, 5 to 8 percent slopes
63	Low	Lynchburg fine sandy loam
61	Low	Chaires fine sand
61	Low	Dothan loamy fine sand, 5 to 8 percent slopes
61	Low	Leon fine sand
61	Low	Sapelo fine sand
61	Low	Talquin fine sand
59	Low	Plummer fine sand
44	Very low	Plummer mucky fine sand, depressional
38	Very low	Surrency fine sand
33	Very low	Pelham fine sand
23	Very low	Rutledge loamy fine sand
23	Very low	Rutledge soils, occasionally flooded
19	Very low	Meggett soils, frequently flooded
19	Very low	Yonges fine sandy loam
0	Very low	Dorovan mucky peat
0	Very low	Pamlico-Dorovan complex

I feel the description for soil and site conditions, degree of limitation, and effects on use as related to permeability are depicted accurately, but the descriptions of corrective measures and continuing limitations are very contrary to local knowledge of soils in this area.

To say that a homeowner with a 0.6 in/hr permeability rate merely has to enlarge his drainfield to 570 square feet and will then have no continuing limitations is wrong. In fact, a 570 square foot drainfield is the same size obtained when following the rules of the Department of Health and Rehabilitative Services Health Programs 10D-6 Standards for Individual Sewage Disposal Facilities for a 3-bedroom home constructed on soil with a 15 minute percolation rate; and the 10D-6 standards were not intended for permanent drainfield facilities. Drainfields which are to last 40 years must be periodically enlarged. The enormity of these two errors is enough to render the report's entire soil potential index ratings meaningless.

In conclusion, once again we have a case where authors from hundreds of miles away make determinations about conditions in Leon County which are contrary to local history and knowledge. Please refrain from using the soil potential ratings given by Guthrie and Latshaw as a basis for any EIS recommendations.

I would like to emphasize again that the Soil Conservation Service (SCS) rates the Lucy, Norfolk and Orangeburg soil as having moderate limitations for absorption fields and defines this as "soil properties or site features which are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations." We feel the SCS best describes the soils in northeast Leon County.

Do you agree with this assessment of the Soil Potential Ratings article? Do you feel the soil potential rating given to the Norfolk soil shown in table 2 is correct? If not, why not? Do you feel the Lucy, Norfolk, and Orangeburg soils are common for northeast Leon County and do you feel they deserve a "High" soil potential rating when used as septic tank absorption fields? If you do, what is the basis for your opinion?

Thank you for the opportunity to comment on the DEIS. Should there be any questions, please give me a call.

Sincerely,

T. Michael Schneider

T. Michael Schneider, P.E
201 Program Manager

TMS/bjs
Attachments

HURLEY W. RUDD
MAYOR-COMMISSIONER

JAMES R. FORD
MAYOR PRO TEM-COMMISSIONER

CAROL BELLAMY
COMMISSIONER

KENT SPRIGGS
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CITY ATTORNEY

TELEPHONE
(904) 595-8100

December 4, 1981

Mr. John E. Hagan III, P.E.
Chief EIS Branch
U.S. Environmental Protection Agency Region IV
345 Courtland St., N.E.
Atlanta, Georgia 30365

Re: Tallahassee-Leon County Wastewater Management
Environmental Impact Statement

Dear Mr. Hagan:

This letter is a followup to the verbal comments I made at the November 5, 1981 draft EIS public hearing. At that meeting, I pointed out the misleading conclusions and false assumptions as well as the blatent misrepresentation of facts by the consultants. My purpose in doing this was to emphasize the shaky data upon which the consultants based their conclusions. In so doing, I wanted to prevent an ultimate EPA decision based on wrong information.

The current EIS study did not evaluate impacts of the 201 study but attempted to rewrite another 201. Major issues that were defined as the prime focus of study were not studied at all. They were defined as not feasible and the need for gathering information thus eliminated.

The executive summary read by Mr. Crum at the public hearing stated, "The EIS was initiated because of the following issues raised by organizations and individual citizens:

1. "Public health risks may be associated with land application of wastewater . . ."

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The enclosed highlighted documentation addresses only this critical element of the EIS. I wish to emphasize the following details.

1. The major reason for instituting the EIS was to evaluate spray irrigation impacts of an expanded SW sprayfield on residents living near Lake Munson. W-123
2. Public health risks of spray irrigation were stated as being a major issue. W-124
3. The environmental monitoring segment of the EIS collected no data concerning health risks and recommended no additional monitoring. Data presented by the city to the consultants referenced several studies by EPA which concluded little or no health risk associated with properly operated land application systems. This information was not present in the EIS. W-125
4. The Alternatives Development Task Report stated that the SW site was "a viable alternative" (Pg 89-90) and that "sands exist up to 45 ft. below this surface." This report also stated (pg. 92) "As described earlier, the soils (in the SW) are capable of accommodating large hydraulic loadings making the area amenable to this method of treatment disposal." W-126
5. As if written by someone who had never read the above mentioned report the Draft Alternatives Evaluation eliminated the SW field from further consideration by stating "The potential southwest site with its predominant Albany and Leon fine soils has excellent bacterial and viral removing characteristics, but the site is marked by a shallow water table during the wet months of the year." In addition ". . . However, the site (referring the SW site) is characterized by soils with a depth to high water table that could result in severe ponding at the site during several wet months of the year." W-127

   These two statements are genuine fabrications born in the imagination of the consultants. I only ask that you look at the enclosed highlighted US Department of Agriculture Soil Survey of Leon County, Florida (sample period 1975-78) of the proposed SW site for which this EIS was begun, and see if you can find the Albany and Leon soils. I sir, cannot.

> The predominant soil is the same as on the existing sprayfield, which is Kershaw sand. (see specifications of soils on SW site). We have never had a ponding problem at the existing site. We have irrigated under experimental conditions at rates exceeding 10"/day and did not experience any ponding. Contrary to all available information, the consultant eliminated the SW site from consideration based on a ponding problem that does not exist.

In conclusion I ask that you review the highlighted documents and ask the same questions we have asked in the City - "How did the consultants reach these conclusions" and "Where did this information come from?"

Sincerely,

William G. Leseman
Laboratory Supervisor
Tallahassee Water Quality Lab

WGL/bjs

cc: T.P. Smith
T. M. Schneider

Specification of Soils on SW Site

		Hydraulic Conductivity
Kershaw Sand	0-5 % slopes	Ave. 54.8 cm/Hr
Ortega Sand	0-5 % slopes	Ave. 32.2 cm/Hr
Alpin Sand	0-5 % slopes	Ave. 31.2 cm/Hr
Blanton Fine Sand	0-5 % slopes	Ave. 11.8 cm/Hr

RESPONSES TO WRITTEN COMMENTS

W-1. No response necessary.

W-2. The first phase of the Tallahassee-Leon Co. 201 Plan was approved by the EPA in 1978. Work has begun on the Phase I facilities, and these facilities are not an issue of this EIS (see Chapter I of the DEIS for further details). Included in the first phase of the 201 Plan is a new 17.5 mgd sludge handling facility. This facility calls for a sludge dewatering and landfilling system.

Because Alternative 4 does not propose further expansion or construction of centralized wastewater treatment and disposal facilities, the 201 Plan Phase I sludge handling facility would be adequate. For this reason landfilling was noted as the only option for sludge disposal in Alternative 4 on p. II-35 of the DEIS.

Alternatives 1 through 3, on the other hand, would require an expansion of sludge disposal facilities beyond 17.5 mgd. A cost-effectiveness analysis was done on the extra capacity needed and landspreading was chosen as the preferred option. The evaluation of sludge treatment and disposal options is described in Chapter 7 of the Draft Alternatives Evaluation Report, Volume II.

W-3. Cost estimates for the alternatives were developed for comparative purposes and do not include the costs of existing facilities. The O&M costs for wastewater collection, treatment, and disposal for Alternatives 1 through 3 include only the costs of the expanded capacity of existing facilities or new facilities. Therefore, it would not be appropriate to include O&M costs for the T. P. Smith and Southwest treatment plants in Alternative 4.

W-4. (1) The City of Tallahassee has not expressed any intention of establishing a centralized management agency and the area slated for on-site and small community systems is outside of their service area. A Leon County agency, such as the Health Department or a community group, such as a homeowner's association seem to be the most likely seats for a centralized management agency in this area.

(2) Presently septage is delivered to the S. W. Treatment Plant and deposited into the septage digester. Future plans call for septage to be processed thru the treatment plant by way of the old head works to the trickling filter. It is estimated that 12,000 additional gallons per day of septage would be produced by the increase in septic tank usage. This volume of septage would not be an operational problem.

(3) The Federal funding eligibility for these facilities is incumbent on the implementation of a public management agency. If further sludge and septage disposal facilities are found to be needed in the future, however, their construction would certainly be encouraged by an eligibility for Federal funding.

W-5. The text should read 3 to 5 years. Four to eight years was somewhat optimistic and reflects ideal conditions. Cost estimates would not be affected by this change as an average figure of 4 year intervals between pumpouts was used for costing purposes. The revision will be noted in Chapter IV of the FEIS.

W-6. The DEIS contains a delineation of the functions and responsibilities of a management district in Chapter III, pages III-6 through III-10. It would not be appropriate for the DEIS to identify a specific agency to take over these responsibilities as this should be a local decision.

A description of the Leon County Public Health Department should be added to page II-71. The revision will be noted in the FEIS in Chapter IV, "Revisions to DEIS and Additional Information".

W-7. It is necessary to amend 201 plans once a final EIS is issued so that the 201 plan is consistent with the final EIS. The final EIS is EPA's decision on the action of the provision of Federal funds for proposed facilities, therefore, future requests by the 201 grantee for Federal funding of wastewater facilities must be consistent with the Final EIS.

The EIS process eliminates the need for the preparation of a FONSI since the EIS satisfies NEPA requirements.

W-8. No response necessary.

W-9. Revisions to the DEIS will be noted in Chapter IV of the FEIS, "Revisions to the Draft EIS and Additional Information."

W-10. The necessary revisions will be noted in Chapter IV, "Revisions to the DEIS and Additional Information".

W-11. Comment noted.

W-12. Figure IV.10 shows the majority of developing areas in Leon County to be suitable for on-site systems such as septic tanks. Figure IV.10 was developed using a series of overlays incorporating information about land use classes, flood hazard areas, depth to water table, and soils suitable for on-site systems. The source of the soils data was the U.S. Department of Agriculture (USDA), Soil Conservation Service (SCS).

Slowly permeable soils are quite acceptable for treating septic tank effluents. Many consist of somewhat slowly permeable loams and silty clay loams. These fine textured soils with high cation exchange capacities help to remove nutrients chemically and therefore are frequently imported into areas that have limiting horizons at or near the surface. These same soils are also used in coarse textured sandy areas to overcome problems with rapid permeability (perc rates of less than 1 minute/inch).

W-13. Figure IV.10 in the DEIS shows at least 3/4 of northern Leon County to be suitable for conventional on-site systems (see the response to Comment W-12). Alternative on-lot systems, such as sand mounds, are available for use on less than suitable sites.

W-14. (1) Comment noted. The designs and costs developed in the EIS were based on the Draft Rule of the Department of Environmental Regulation - Chapter 17-6 - "Wastewater Facilities".

(2) To optimize both system performance and land use, 1/3 acre lots are recommended. Lots as small as 1/4 acre are allowed and with careful system and subdivision design, can be adequate.

(3) Comment noted.

W-15. The National Environmental Policy Act (NEPA) requires that an EIS be prepared when a proposed Federal Action may have significant adverse impacts to the quality of the human environment. This EIS has been prepared according to EPA's regulations implementing the requirement of NEPA. The conclusions reached in this EIS are based on sound technical information. There is no reason to rescind this EIS.

Concerns of the City of Tallahassee, detailed in written comments W-15 thru W-96 and W-115 thru W-121, have been responded to by EPA in this Final EIS. The comments received on the Draft EIS have been carefully considered in the final decision in this Final EIS.

W-16. The EIS did not use the "exceptional family" to determine the most applicable wastewater management alternative. There are families that probably use much more water than an average sized family with typical habits, however, this family could not be used as a basis for planning in the EIS. With the growing water shortage problems, any reduction in excess water use would probably be considered a benefit and therefore, would be a positive impact for this alternative.

W-17. Comment noted. If regulations are properly designed and enforced, then on-site systems should not be any more susceptible to political influence than central systems.

W-18. The Meginnis Arm (J-Series) area has some documented cases of malfunctioning on-lot systems, but not all of the area is in need of new or upgraded wastewater systems. As pointed out in the comment, the soils in this area are common in N.E. Leon County, and they were found to be generally suitable for on-lot systems. The Final EIS is not recommending this area for conventional sewers as proposed by the 201 plan, instead, it recommends improved on-lot or small community systems to eliminate the existing malfunctioning systems.

W-19. A septic tank drainfield is not designed to fail, it is designed to renovate and dispose of wastewater. Theoretically, inert filterable material will eventually clog the filter surface; in practice it is the build-up of biological material that prematurely clogs a soil absorption field. With proper loading, this biological material will not build up due to natural decomposition. The life-span of a drainfield based on the accumulation of inert filterable material is dependent on many factors such as type of wastewater, the alkalinity and hardness of the water as well as the type of the sand used in construction. The EIS assumed a twenty year life-span.

W-20. The Florida DER issues operating permits to package treatment plants and takes enforcement action when necessary to assure that permit conditions are met. Should a package plant be abandoned, responsibility for its operation is usually settled by the courts. In some cases, homeowners may take over operation of a plant through the formation of an association or special taxing district.

W-21. The EIS realizes that some current rules and regulations may need to be modified to address various situations that will arise. Technical means, such as low application rates or site modification techniques, may be used to satisfy existing regulatory needs. The widespread use of on-site systems may require regulatory changes.

W-22 & W-23. Public management of septic systems is a new concept to optimize the operation and life span of on-site systems. Among the primary objectives of a management district is to supply information and controls that State and local agencies can not enforce due to manpower limitations. Information such as the maintenance needs of septic systems, as well as siting, design, and construction requirements for specific conditions are prime examples of the type of information supplied by management districts.

The current decrease in Federal funding of wastewater projects will make the cost of centralized systems prohibitive to many local communities. State and local rules and regulations may need to be modified to provide wastewater management with technology that can be funded locally. Without Federal funding and with a need to provide wastewater management, there could be considerable interest in establishing septic tank management systems with rules more stringent than State standards if it would provide a viable alternative to conventional centralized systems.

W-24. The EIS has not located a management district with characteristics exactly matching those found in Leon County. It is doubtful that there exists an area that matches all or most of Leon County's characteristics for two reasons. First, the management district concept is relatively new and second, most management districts differ in function and concept due to physical, environmental, social, and political circumstances. It is the flexibility of the management district that makes the concept useful.

W-25. It is difficult to quantify the number of monitoring wells which would be needed by the year 2000 to provide an acceptable assurance of safe drinking water. This is because the number and location of wells will be directly related to the location and size of development.

A general monitoring strategy can be recommended, however. Groundwater monitoring in developing areas should ideally be implemented before building begins. This will allow background information to be developed as well as the identification of the effects on groundwater from construction activity. Monitoring should continue through construction and the life of the development. At a minimum, wells should be located down gradient of groundwater movement as well as within the development area. The use of existing private and public water supply wells should be considered for monitoring. Because municipal water supply wells in this area are normally 250 to 450 feet deep, most sampling locations should include a well with a depth greater than 200 feet. Private water supply wells are generally less than 300 feet in depth. The actual depths of private wells in the vicinity of the sampling location should be taken into account when determining if a second, shallower well is necessary at that location.

The purpose of a groundwater quality monitoring program would be to detect trends in its quality. This would allow corrective action to be taken before the quality became so degraded as to require renovation or additional treatment before use as potable water.

Should adverse conditions appear to be developing, corrective actions, such as those described in Part C of Chapter III in the DEIS, should be taken.

W-26. Firstly, the EPA's position is and has been that if a southwest sprayfield had been part of the selected alternative, then a microbiological study of health effects of this sprayfield would have been conducted.

Secondly, the expansion of the southeast sprayfield to 17.5 mgd was an EPA approved part of the 201 Facilities Plan. The decision to route 17.5 mgd to this site had already been made and was not an issue of this EIS. The task of the EIS was to evaluate what to do with any flow greater than 17.5 mgd which would need to be disposed of in southern Leon County.

Finally, the decision to utilize the southeast site for flows greater than 17.5 mgd (Alternatives 1-3) considered the following:

1. Effluent conveyance capacity from T.P. Smith/Southwest plant to Southeast sprayfield site is adequate for all alternatives.
2. There is sufficient land at the existing southeast site to expand its capacity to 20.0 mgd.
3. The southeast sprayfield site is much more isolated from human habitation than the proposed southwest site.
4. Available soils data at the time of the Alternatives Evaluation Task showed a seasonal high water table at the southwest site.

W-27. Impervious surfaces include roads, parking lots, and roof tops. The conclusion that increased impervious surfaces would result is based on two premises, the first being increased density and the second being ability to develop in marginal areas which would not be possible with on-site systems.

Between now and the year 2000, the Tallahasee-Leon County Planning Department anticipates that areas containing an average density of greater than four units/acre will be developed in the Northeast. These areas will contain both residential and commercial land uses. The I-10/Mahan Drive interchange area has already started to undergo commercial development and it is expected that this node will expand during the next 20 years. Potential also exists for development of apartment and townhouse complexes along arterials in the Northeast.

Higher density development is possible with a centralized system. The type of development that may occur depends on many factors. It is safe to say a developer who can obtain a higher return on his investment with high density housing will do so whenever possible; a centralized system would make this option possible. Marginal land would also become more valuable to a developer and therefore would be developed whenever possible thus increasing impervious surfaces.

W-28. The EIS does not make this conclusion. Rather, the statement that a treatment plant in the northeast would be incompatible with existing land use is the opinion of local homeowners in response to the 201 Plan, and is noted as such.

W-29. Impacts from septic tank and drainfield construction are limited to the installation site, where they are considered minimal in relation to the total impact associated with home construction. In the past, septic tank drainfield sites have been completely cleared, however, the now recognized need to limit heavy equipment operation over the area where the drainfield would be installed to prevent soil compaction may reduce overall home construction impacts in the future.

Wastewater disposal from a centralized system effectively prevents the disposal area from being utilized for other purposes. This impact would last the life of the centralized system. An on-site drainage field, on the other hand, while imposing some limitations, does not prevent the area from being used as a normal yard.

Finally, interceptors to a centralized system are normally placed in low-lying areas to take advantage of gravity collection. These areas may be environmentally sensitive. They could be more susceptible to erosion due to slope and therefore more difficult to stabilize. Construction of a home with an on-site treatment/disposal system would probably not be allowed in these low-lying areas.

W-30. On-site systems are now considered to be viable options to conventional sewers when suitable conditions exist. EPA requires that on-site and other innovative and alternative systems be fully considered in 201 facility planning, especially when their systems are likely to be more cost-effective than collection and interceptor networks.

With the escalating cost of wastewater collection, treatment and disposal and the advances in alternative technology, the emphasis on large centralized systems has changed. Many rules and regulations have yet to reflect this reality.

W-31. The rapid infiltration method of wastewater treatment and disposal normally provides a poor means for nitrogen removal as indicated in the publication referred to. However, Bonwer (1) obtained up to 80% nitrogen removal as a combined result of ammonia absorption and denitrification by managing hydraulic loading cycles to create alternately anaerobic and aerobic conditions. In addition, by controlling hydraulic loading, vegetation may be employed to remove some nitrogen as long as the vegetation can withstand the high hydraulic loading rates and is harvested. Nitrogen removal may require additional process attention and will be strongly influenced by wastewater characteristics. Cost for nitrogen removal by denitrification may typically range from

47 cents per 1000 gallons at 1 mgd to 22 cents per 1000 gallons at 10 mgd. (2)

(1) Bonwer, H. J. C. Lance, and M. S. Riggs: High-Rate Land Treatment II: Water Quality and Economic Aspects of the Flushing Meadows Project, J. WPCF. Vol. 46, pp. 884-859. May 1974.

(2) U.S. EPA. Environmental Pollution Control Alternatives: Municipal Wastewater. Technology Transfer, EPA-625/5-79-612, November 1979.

W-32. The evaluation of the impacts of alternative wastewater management systems on the quality of groundwater in the study area was carried out by a number of professionals at EPA, Region IV and by EPA's consultants for this EIS. The conclusion reached was the concensus of those involved in the preparation of this EIS and is based on the best available information.

W-33. Sludge disposal cost for septic tanks is part of the operation and maintenance cost which is in the present worth values in Table II-18. It was not listed separately because pumping of sludge from septic tanks represents the major operation and maintenance cost for septic tanks. This cost includes the expense of sludge disposal by the person pumping the septic tank as well as labor costs.

An additional 12,000 gallons per day of septage sludge was estimated to be produced by the year 2000. Assuming a septic tank pumping truck could clean 4 tanks per day with 1000 gallon capacity, three additional trucks would be required in 2000. If these trucks could haul more or serve more homes in one day, the number of trucks would be less. Half as many trucks would be required by the year 1990. The actual number of miles traveled and tanks served per day depends on the location of the various septic tanks in relation to each other and the disposal site.

W-34. Oxidation ponds were included as a means of achieving secondary quality effluent. Its selection was not based upon whether or not the process was permitted by the Florida Department of Environmental Regulation, rather it was included on its technical characteristics.

W-35. The physiography of Leon County is described in Chapter IV of the DEIS. The most irregular terrain in the unsewered portion of Leon County is found in the Northeast, the area expecting the most future population growth. This area is known as the Northern Highlands and is described as having "...mature topography that is gentle and moderate." (Hendry, C. and C. Sproul; Geology and Ground-Water Resources of Leon County, Florida; Florida Geological Survey, Bulletin #47, 1966; p. 24.) The USGS Topographic Maps of the area show that slopes in this area rarely exceed 10%

and cannot be considered excessive for on-site systems. In addition, neither depth to water table nor depth to bedrock would limit the use of on-site systems in the Northern Highlands. More restrictive to the use of on-site systems in Leon County are the high groundwater conditions found in the Apalachicola Coastal Lowlands and the sinkhole-sand dune topography and high bedrock (limestone) conditions found in the Woodville Karst Plain. Both areas are found in southern Leon County and are not expected to experience large future population growth. A revision to page II-20 of the DEIS will be noted in Chapter IV of the FEIS.

The Design Manual, Onsite Wastewater and Disposal Systems, (EPA 1980, p. 212) states that a soil absorption bed can function effectively with slopes up to 5%, while trenches can be effective with slopes up to 25%. Therefore, slopes would not limit the use of conventional on-site systems in unsewered portions of Leon County.

High groundwater and water table conditions could limit the use of conventional on-site systems in southern Leon County and the use of alternative on-site systems or small community systems should be considered for any development in this area.

W-36. Sand filters and aerated lagoons were included in Table II-10 as small community treatment systems that have been used successfully in the treatment of small wastewater flows. Inclusion in this Table was not based upon whether or not they were permitted by the Florida Department of Environmental Regulation, rather they were included on their technical characteristics.

W-37. The disadvantages associated with higher waste concentration were not based on Florida rules, rather, it was based upon possible treatment difficulties. These treatment difficulties stem from high organic loadings which may require greater aeration and sludge handling capabilities at a particular treatment facility.

W-38. Due to the number of alternatives developed by the EIS and the planning nature of the study, specific approval by affected organizations and agencies was not sought. Proposed locations for wastewater management facilities were based on the most cost-effective options under existing conditions. Actual facility locations will vary depending upon the situation at the time of design. The primary function of developing tentative locations for wastewater management facilities was to estimate cost for the different alternatives.

W-39. This assumption was made for the purpose of projecting a development framework for analyzing the costs and impacts of the No-Federal-Action Alternative. The EIS recognizes the City's right and ability to independently finance treatment capacity beyond 17.5 mgd.

The assumption that development density of three units per acre would take place with no federal grants is based on the need to optimize the feasibility of on-site wastewater systems. One-third acre lots will permit large absorption areas where necessary and limit difficulties such as isolation distances, surface runoff and personal land use created by higher density development.

W-40. Cost-effectiveness in an environmental sense means that the money expended for Alternative 4 will create the least amount of or most acceptable environment impacts while achieving the desired goal.

W-41. The environmental impacts of Alternative 4 discussed on pages II-53 and II-54 are based on the assumptions of no expansion or construction of centralized wastewater treatment/disposal facilities (see pages II-43 through II-47 of the DEIS and the response to comment W-39). Therefore it would be incorrect to imply, in this sentence that these facilities might be built and the environmental impacts listed below apply to both situations. The environmental impacts of the expansion or construction of centralized wastewater facilities, with or without Federal funding, are listed under Alternatives 1 through 3 on pages II-55 to II-62 of the DEIS.

Page II-53, paragraph 2: Erosion could occur where areas are denuded of vegetation during the laying of those few collection lines proposed under Alternative 4. Stormwaters could carry silt to nearby surface water bodies or other low lying areas.

Page II-53, paragraph 5: The smaller amount of impervious surface per developed acre, the greater amount of stormwater which is absorbed by the soil and the smaller the amount of stormwater which runs off. The EIS concluded that Alternative 4 will result in a smaller percent of impervious surface per developed acre in the Northeast area of the city than will Alternatives 1, 2 and 3.

The EIS concluded that when on-site soil absorption systems are properly installed and maintained, oversaturated drainfields do not occur except after rare climatological conditions.

W-42. The EIS concluded that properly installed and maintained drainfields will not lead to saturated drainfields except after extremely unusual climatological conditions.

W-43. The possibility of runoff from malfunctioning systems is mentioned in this section (p. II-54). Experience in the use of septic tanks in the N.E. area does not indicate a high level of failure. In addition, these few malfunctions could be virtually eliminated by proper installation and maintenance.

W-44. On-site systems obviously require acreage. However, drainfields can be situated on comparatively small parcels, and a large number of lots will have suitable areas which are already cleared. While regional sprayfield sites can be designed to minimize major habitat disruptions, they cannot be designed to utilize the smaller sites available for on-site systems.

W-45. In the Tallahassee urban area, population growth and economic growth will, for the most part, be induced by the presence of State government employment opportunities and the expansion of the two major universities, rather than by the provision of wastewater management systems. However, population infilling within the Tallahassee urban area will be encouraged by the lack of a centralized system outside of the City's service area. This will be noted in Chapter IV of the FEIS, "Revisions to DEIS and Additional Information". Further, the trend for single family detached housing in the N.E. area can be fully maintained under this alternative

W-46. One foot separation should exist between the gravel filter (envelope) and the bottom of deeper root plants such as carrots and potatoes.

Most drainfields have from 1 - 1 1/2 feet of soil cover over trench laterals principally for protection of the soil absorption system. Therefore, even deep rooted plants can, in many places, be grown directly over soil absorption systems.

In the case of shallow placement system, often railroad ties are used to define the garden and 1/2 foot of topsoil and/or compost are imported.

Chapter 10D-6, Florida Administrative Code, Standards for Individual Sewage Disposal Systems, states: "a minimum area of two (2) times the required absorption area shall be available for the absorption system". This reserve area would be an excellent place for a garden.

W-47. This point is addressed on page II-54 of the DEIS under Community Services and Facilities but is expected to be mitigated by the increased infilling in the existing sewered areas.

W-48. Yes, soils may clog due to suspended solids in the effluent. A revision to page II-54 of the DEIS will be noted in Chapter IV of the FEIS.

W-49. Yes, any potential recycling of nutrients or benefits from growing crops are lost with the use of septic tanks. A revision to page II-54 of the DEIS will be noted in Chapter IV of the FEIS.

W-50. Septic tanks reduce the total number of microorganisms but the removal of pathogens by the septic tank has not been demonstrated. However, the septic tank is only half of the on-site system; the soil absorption field has demonstrated the ability to significantly reduce the microbial population of wastewater. The mechanisms of bacteria and virus removal by soil are very complex and include absorption to soil partials, filtering, and attrition due to toxic chemicals and antibiotics produced from molds, bacilla, and actinomycetes. For example, Ziebell (1) concluded that in properly constructed and maintained systems, there will be a 3 log reduction of bacteria within 1 foot into the soil surrounding the soil absorption system. In addition, Ziebell showed that within the second foot, bacterial counts are in the comparable range for some treated wastewater effluent.

(1) Ziebell, W. A., D. H. Nero, J. F. Deininger and E. McCoy. 1975a. "Use of Bacteria in Assessing Waste Treatment and Soil Disposal Systems." Ground Water Pollution. Editorial Board, Underwater Research Institute, St. Louis, Missouri. pp. 58-64.

W-51. The statement on page II-54 is general. Malfunctioning septic tanks could constitute a public health risk by direct human contact in instances of ponding "breakouts" where improperly maintained or improperly placed septic systems occur (i.e. on seasonally high water tables). The EIS has concluded that due to the confining layers between drainfields and well intakes and the great depth of soil (over 200 ft.) through which the effluent would travel that risk of detectable contamination is very remote.

These specifics will be noted in Chapter IV of the FEIS, "Revisions to DEIS and Additional Information".

W-52. All of the alternatives have potential for adverse impacts on groundwater, hence the "Cons" statements on page viii. Of all the alternatives, 4 is felt to have the least impact, hence the "Pros" claim on the same page. The groundwater impacts from septic tanks are expected to be localized to the upper level of the surficial aquifer.

W-53. The sentence merely states that "existing degradation" is documented in the Environmental Monitoring Program Segment I - Task Report. The citation is also incorporated into other alternatives by reference to the environmental impacts described under Alternative 1A and B. The discussion of increased impervious surface under Comment W-27 explains the probable increase of urban runoff under various alternatives.

W-54. During an interview on May 17, 1979, Louis Tesar, Florida Department of State, Division of Archives, History and Record Management, stated that the area above the Cody Escarpment is thought to be rich in archaeological resources, although only certain areas have been investigated to date in detail. His expectations are based on statistical models of the area.

W-55. Three groups have designated protected species for the study area. The Florida Committee on Rare and Endangered Plants and Animals (FCREPA) has prepared a series of reports on the rare and endangered biota of Florida. FCREPA has completed five volumes dealing with mammals, birds, amphibians and reptiles, fishes and plants. Volumes on invertebrates and recommendations and liaison are expected to be released by Fall of 1981. FCREPA uses five categories to classify the current status of these species: endangered, threatened, rare, species of special concern, and status undetermined.

Based on their inventory and review, FCREPA recommends that species be formally included and protected under the wildlife code. The Florida Game and Fresh Water Fish Commission (FGFWFC) makes the decision at the State level as to which species are listed and under which category they are listed. In addition, the U.S. Fish and Wildlife Service (USFWS) lists species to be protected under the Federal Endangered Species Act of 1973.

Species are not legally protected unless they are included on either the State or Federal Lists. However, EPA is required to review impacts to species proposed on the Federal list. Protection generally varies according to the status designation. For example, the Gopher tortoise (Gopherus polyphemus) is not listed by the USFWS, was recommended for threatened status by FCREPA, and downgraded to a species of special concern by FGFWFC. Even though it is legal game, as a species of special concern the Gopher tortoise has a closed season during breeding periods and is protected by a possession limit.

FCREPA has recommended protected status under the species of special concern category for several aquatic invertebrates known to exist in Leon County. These species include the Leon-Wakulla County Cave crayfish (Procambarus orcinus) and the Hobb's Cave isopod (Asellus holobsi maloney). These species occupy sinkhole, aquatic cave, and other subterranean habitats. Due to the relative inaccessibility of these habitats, the full extent of these species' distribution cannot be determined. The FCREPA recommendation has not yet been accepted by FGFWFC. No invertebrate species are listed for Leon County by the USFWS. Due to the unknown distribution pattern of the species, impacts were assessed as negative, long term, and minor for alternatives with spray fields in areas with karstic geology.

W-56. See the response to comment W-55. The gopher tortoise is listed as a "species of special concern" by the Florida Committee on Rare and Endangered Plants and Animals. A correction to the term on page IV-33 of the DEIS will be noted in Chapter IV of the FEIS, "Revisions to DEIS and Additional Information".

W-57. Citrus groves is not an accurate term. The term which should be used is orchard groves and a revision of the text to reflect that fact will be noted in Chapter IV of the FEIS. The source of this information is the Tallahassee-Leon County 208 Plan.

W-58. As noted on page IV-55 of the DEIS, this statement was a conclusion of the 201 Facilities Plan. When contacted, Mr. John Dean of the City Utilities, Sewer Division expressed the opinion that the documentation is more than adequate for sewer system management at this time, and has been in good shape for about 10 years. He said that improvements to the documentation are constantly implemented, and that the sewer maps have been revised twice in the past three years. Given this information, it will be noted in Chapter IV of the FEIS, "Revisions to the DEIS and Additional Information" that the situation appears to have improved since the completion of the 201 Plan.

W-59. At the time the data for the EIS Environmental Inventory were collected, the effluent disposal points reported were correct. Since that time, effluent disposal has begun at the 201 Phase 1 Southeast Sprayfield and surface water discharges from the TP Smith/Southwest Plants have closed. The small SW sprayfield adjacent to the plant is still in use. The centrifuge has not been used recently because a) most sludge is disposed of by landspreading at the airport, for which the centrifuge is not required and b) the centrifuge has been a maintenance problem and its production has not been sufficient to justify its use. These facts will be noted in Chapter IV of the FEIS, "Revisions to the Draft EIS and Additional Information."

W-60. A given septic tank will probably be pumped out once every four years. Therefore, the noise impact of pumping and pump out trucks is very infrequent in a given locale. Pump out trucks converging on the septage disposal site on a daily basis will create noise impacts. Such noise may be equal to or greater than that caused by trucks hauling sludge. A revision will be noted in Chapter IV of the FEIS, "Revisions to the Draft EIS and Additional Information".

Farm equipment that are used with sludge disposal include plowing and discing implements to incorporate sludge into the soil. This equipment would be used by the farmer to which the land is leased, however, not to the City.

W-61. The earth moving necessary to install on-site soil absorption systems is temporary. After construction, the site is returned approximately to its original contours. No significant impact results from this temporary earth moving. Moreover, the earth moving necessary to install an on-site soil absorption field will be incidental to the larger scale construction activities related to landscaping and home construction.

W-62. Soil absorption systems are affected by two forms of soil clogging. The most prevalent is that associated with improper maintenance of the septic tank which allows solids from the septic tank to overflow into the soil absorption system. This form of clogging can be prevented with proper operation and maintenance. The second form of soil clogging is associated with system failure due to soil surface blinding by inert material build-up. This form of soil clogging is the natural aging process of the soil absorption field and can not be prevented. However, specific design and operation such as the following can be utilized to ensure that soil clogging is not premature:

1. Pressure distribution
2. Alternating drain fields
3. Additional treatment, e.g. septic solids retainer
4. Septic system rehabilitation
5. Water conservation
6. Prohibit garbage disposals

The time it takes to render the soil absorption field inoperable is the design life of the septic tank/soil absorption system.

W-63. The reference to overland runoff and lateral seepage to nearby surface waters from sprayfields and sludge disposal sites is included to address possible impacts from system malfunctioning or periods of extreme precipitation. A similar impact is included in the same table for on-site system malfunctions under Alternative 4. A more detailed discussion of the impacts and mitigative measures can be found in Chapters VI and VII of the Alternatives Evaluation Task Report.

W-64. Surface water quality may be adversely impacted by urban runoff from increases in impervious surfaces. Population densities in the Northeast quadrant of the city will reflect whatever technologies future developers consider cost-effective for their projects at the time of construction. The response to comment W-27 contains a discussion of these items.

W-65. The impact assessment is based on the data base developed and referenced in the Environmental Inventory Task Report, the proper installation and maintenance of proposed systems, and the institution of a monitoring program. It should be pointed out that this impact is from malfunctioning systems in the overall study area.

W-66. See the response to comment W-55.

W-67. This point is addressed in the response to comment W-44. The clearing for septic tanks and drainfields can be considered a direct, negative, long-term impact and is nominal in degree. A revision to page IV-72 of the DEIS will be noted in Chapter IV of the FEIS.

Septage disposal is discussed in the response to comment W-4.

W-68. The decision about the technology for sludge disposal from septic tanks remains to be made. The decision will be made eventually by the management agency responsible for operation and maintenance of small community systems and individual on-site systems (see p. III-5). It is premature to speculate whether "several hundred acres" will be converted from agricultural/forestry land uses to cropland.

As discussed in the response to comment W-4, the Southwest plant is currently accomodating septage and should have sufficient capacity to continue. Therefore, this practice was assumed to continue, and the costs were assumed to be passed on to the user in the O&M costs (estimated from local pump-out charges).

Should the City decide not to continue this service, it would be necessary to construct a separate septage treatment and disposal facility. This would, of course, increase the costs to the users. Sludge treatment practices which would be applicable to septage treatment include sludge lagoons, lime stabilization, composting, chemical treatment, and dewatering. Land disposal practices applicable to septage disposal include land application and sludge lagoons. Given the proper management agency, these facilities would probably be grant-eligible.

Cropland is a type of agricultural land on which typically row crops are planted. Pastures and pine plantations are not typically referred to as cropland.

W-69. Impacts from transmission of pathogens from sprayfields by wind or vectors are assessed as insignificant in Table IV.19 and as negligible on Page II-59. The EIS intends no contradiction in these statements. Public Health concerns are discussed in more detail in the Alternatives Evaluation Task Report (Pages VI-53 to VI-57).

W-70. Destruction of archaeological and historical resources could come from home construction including septic tank drainfields and from wastewater management facility construction if not surveyed before construction.

W-71. Hunting in the Apalachicola National Forest will not be directly impacted by conversion of land to urban uses.

Other areas of the County presently used by hunters may be urbanized by the year 2000, especially portions of the St. Joseph Paper Company lands. In addition, should Southwood Plantation ever be sold for development, the game supply on nearby St. Joseph Paper Company lands could be decreased. Game in excess of the carrying capacity of Southwood Plantation tends to migrate to St. Joseph Paper Company lands which are open to public hunting (pers. comm., Charles Allen, National Wild Turkey Federation, December 1981).

W-72. It is not claimed that there are forestry uses in the Northeast which will be converted to other land uses. The EIS concluded that an influx of 90,000 additional persons by the year 2000 will reduce forestry uses in Leon County by causing the urbanization of those areas closest to Tallahassee. The St. Joseph Paper Company lands may come under development pressures.

W-73. As requested, the estimated number of working hours the following personnel spent on this project while in Leon County are listed below:

	Hours
U.S. Environmental Protection Agency	
Robert B. Howard, Chief, EIS Preparation Section	32
W. Bowman Crum, Current Project Officer	52
Richard D. Green, Prior Project Officer	45
Virginia W. Buff, 201 Project Engineer	0
Gannett Fleming Corddry and Carpenter, Inc.	
Thomas M. Rachford, Senior Project Manager	20
Albert T. Bain, Project Manager	112
Mark Flaherty, Environmental Engineer	184
James Fuller, Environmental Engineer	0
Sara Frailey, Environmental Engineer	16
John W. Jacobs, Environmental Scientist	40
Richard C. Callahan, Environmental Scientist	0
Claude Terry and Associates, Inc.	
Claude E. Terry, Project Executive	60
Louise B. Franklin, Project Manager, Environmental Planner	111
Robert J. Hunter, Environmental Scientist	162
Thomas C. Mather, Environmental Scientist	121
James C. Hodges, Environmental Scientist	48

A. Anita Patterson, Environmental Scientist
(Laboratory Scientist)

0

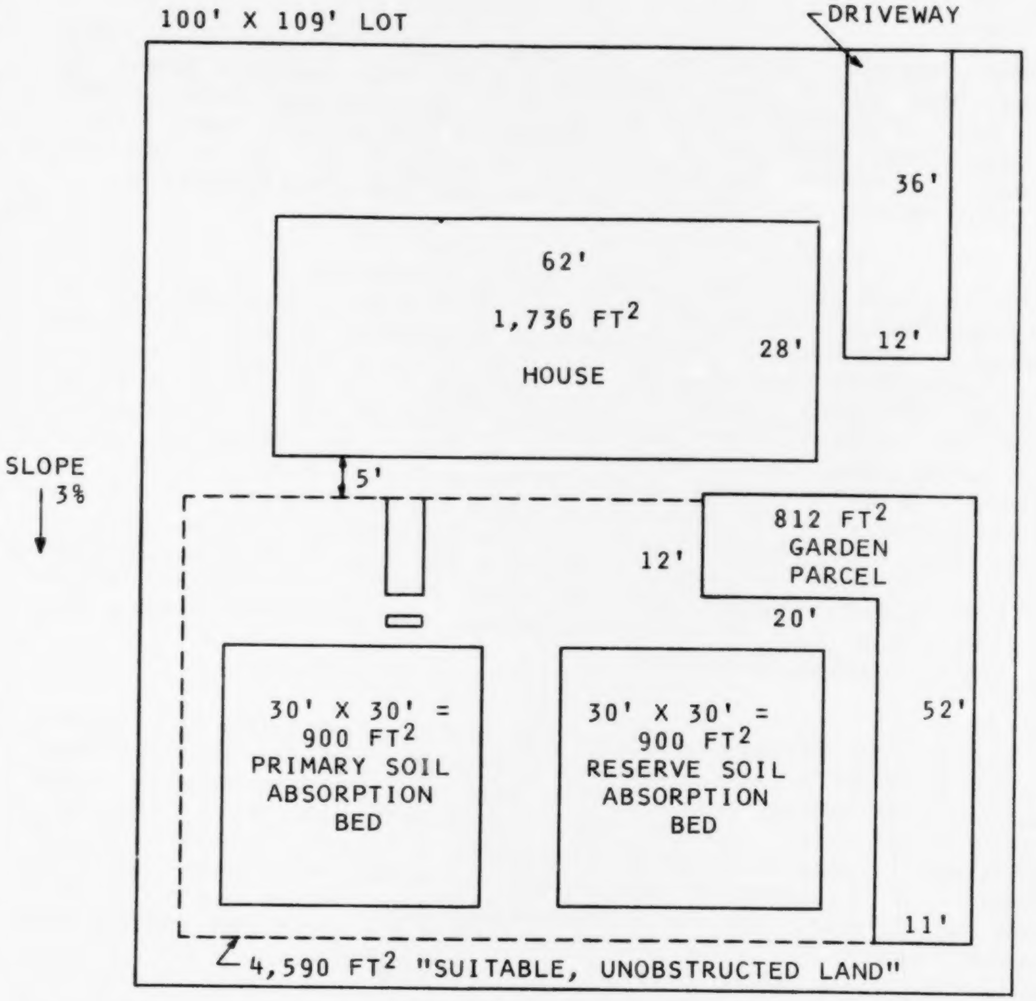
W-74. The layout requested is presented in Figure V-1. The drainfield absorption area required for a three bedroom house on a site with a percolation rate of 15 minutes per inch is 190 square feet per bedroom X 3 bedrooms = 570 square feet. This figure was increased by 50 percent to compensate for a loss of sidewall absorption area resulting from the bed configuration.

W-75. The collection system costs for Alternative 4 in the Draft Alternatives Evaluation Report include costs for the expansion of an existing interceptor that extends northeast towards Killearn Estates (referring to Figure II.4.2, this interceptor extends north from monitoring point 1). The EIS flow monitoring study indicated no excess capacity in this interceptor. An improvements program has been undertaken by the City, however, which will give this interceptor adequate capacity to handle projected year 2000 flows without further expansion. Therefore, costs for expanding this line, approximately $700,000, were not included in the Draft EIS cost estimates. Totals for the No-Federal Action Alternative should read 5.98 (w/ FRM) and 10.4 (w/o FRM) which includes only the cost of on-lot systems. Alternative 4 does not include any interceptor sewers.

W-76. (1) Slowly permeable soils are quite acceptable for treating septic tank effluent. Many of the preferred soils for proper wastewater renovation consist of somewhat slowly permeable loams and silty clay loams. These finer textured soils with high cation exchange capacities help to remove nutrients chemically and therefore are frequently imported into areas that have limiting horizons at or near the surface. These same soils are also used in coarse textured sandy areas to overcome problems with rapid permeability, perc rates of less than 1 minute/inch.

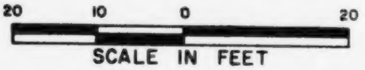
Many states have an abundance of slowly permeable fine textured soils with permeabilities, as slow as 120 min./inch. Table V-1 shows acceptable application rates for wastewater effluent with respect to various soil textures and associated percolation rates. It can be readily seen that as permeability decreases so does the application rate. A soil absorption system installed in a silt loam with a percolation rate of 60 minute/inch would require approximately 1000 square feet of soil absorption area which can be constructed in a 32 foot square bed configuration.

At no point in the DEIS was it stated that these lower loading rates would be obtained only by reduced water use. Water conservation measures are not necessarily required when absorption systems are considered for slowly to very slowly permeable soils. Though not specifically stated in many regulatory publications, a net reduction in wastewater flow generation could indeed warrant


100' X 109' LOT
DRIVEWAY
36'
12'
62'
1,736 FT2
HOUSE
28'
SLOPE
3%
5'
812 FT2
GARDEN
PARCEL
12'
20'
52'
11'
30' X 30' =
900 FT2
PRIMARY SOIL
ABSORPTION
BED
30' X 30' =
900 FT2
RESERVE SOIL
ABSORPTION
BED
4,590 FT2 "SUITABLE, UNOBSTRUCTED LAND"

CITY OF TALLAHASSEE
LEON COUNTY, FLORIDA

ON-SITE SYSTEM LAYOUT


20
10
0
20
SCALE IN FEET

GANNETT FLEMING CORDDRY AND CARPENTER, INC.
HARRISBURG, PENNSYLVANIA

FIGURE V. I

TABLE V-1
RECOMMENDED RATES OF WASTEWATER APPLICATION FOR TRENCH AND BED BOTTOM AREAS (a)

Soil Texture	Percolation Rate (min/in.)	Application Rate(b) (gpd/sq. ft.)
Gravel, coarse sand	less than 1	Not suitable(c)
Coarse to medium sand	1-5	1.2
Fine sand, loamy sand	6-15	0.8
Sandy loam, loam	16-30	0.6
Loam, porous silt loam	31-60	0.45
Silty clay loam, clay loam(d)	61-120	0.2(e)

(a) May be suitable estimates for sidewall infiltration rates.

(b) Rates based on septic tank effluent from a domestic waste source. A factor of safety may be desirable for wastes of significantly different character.

(c) Soils with percolation rates §1 min/in. can be used if the soil is replaced with a suitably thick (¶2 ft.) layer of loamy sand or sand.

(d) Soils without expandable clays.

(e) These soils may be easily damaged during construction.

Source: U.S. EPA. "Design Manual, Onsite Wastewater Treatment and Disposal Systems." October 1980.

a proportional reduction in the required absorption area requirement.

(2) This statement should be corrected to reflect the fact that soil absorption area requirements are sized on the proposed or anticipated number of bedrooms and the results of the site evaluation and percolation tests. This revision will be noted in Chapter IV of the DEIS.

W-77. The EIS looked at three units per acre as the ideal lot size to ensure proper operation of on-lot systems. This density allows for additional disposal area where needed and limits the adverse conditions that can be created by higher densities. Examples of problems caused by higher densities would be minimal isolation distances, high percentage of impermeable surfaces and runoff from adjacent lots and driveways. The EIS concluded that 3 lots per acre is the ideal density for on-site septic systems and, therefore, based Alternative 4 on this assumption.

W-78. Given the soil types and depths found in the Tallahassee-Leon County area, the EIS concluded that on-lot and small community systems are the most cost-effective and environmentally sound wastewater management alternative. Because most of the projected development has yet to begin there is good potential to ensure that developing wastewater needs can be met with on-lot and small community systems and management districts. Basically, problems can be prevented with proper planning design, construction, operation and maintenance.

Soils in the Leon County area are taxonomically quite different from other soils that have developed recently from coarse sand deposits such as Duval and Orange Counties. These Entisols are relatively young and lack true diagnostic soil horizons. These soils simply consist of fine to coarse sandy textures which rely on the sand particles to physically remove wastewater contaminants. These soils are generally found in low-lying moist to wet topographic settings. Periodic wetness and rapid permeability in deeper columns reduces the overall potential these soils have for wastewater renovation.

Leon County soils are for the most part older and have distinct horizons, many of which are chemically active loams and clay loams. Except for the low-lying setting adjacent to the numerous lakes and ponds, there are vast areas of deep and well drained moderately permeable Orangeburg and Norfolk soils which have a generally high potential for accepting and treating septic effluent.

It is recognized that one of the reasons for the problems that have occurred with these systems in Orange and Duval Counties is the lack of proper operation and maintenance. The EIS recommends a public management district or other means of on-site and small community systems management so as to avoid this problem.

W-79. The Draft EIS selected plan does not suggest a development direction counter to that of the Comprehensive Plan. The land use plan map for the Tallahassee area (dated July 1981) developed by the Tallahassee-Leon County Planning Department (TLCPD) and adopted by the Tallahassee City Commission and the Leon County Board of Commissioners shows high density development to be concentrated within the City's service area boundaries. Lower development densities are indicated for the outlying areas. By not providing centralized collection and treatment facilities to the lower density outlying areas, higher density development is encouraged within the City's service area boundaries, and the intentions of the TLCPD are upheld.

W-80. This map was developed using a series of maps and overlays incorporating information about land use, flood hazard areas, and soils with minor restrictions regarding the use of on-site systems based on permeability and depths to restrictive horizons. Areas determined to be suitable for on-site systems have soils with a medium or higher potential for the use of septic tank absorption fields, have little present development, are not in a flood hazard area, and have at least a two foot deep soil profile free of groundwater and other restrictive horizons. Information on the physical characteristics of these soils was obtained from the interpretation record of the U.S. Department of Agriculture Soil Conservation Service Established Series Listings. Other sources of information include the Tallahassee-Leon County Planning Department; the U.S. Geological Survey topographic maps; and the U.S. Department of Housing and Urban Development, Federal Insurance Study for Leon County.

W-81. Alternative System 1a, as developed in the EIS (see p. II-38 of the DEIS) includes the construction of a centralized treatment/disposal facility in the Northeast. Because of high land costs in the Northeast and the availability of suitable sites, the EIS determined that effluent disposal by rapid infiltration is, the most cost-effective option. The City's modified Alternative System 1a is the same as the system described above, except that effluent disposal would be by slow rate land application. The City was concerned about potential negative effects of a rapid infiltration system on the potable water supply.

The modified Alternative 1a was not introduced until the end of the Alternatives Evaluation Task and does not represent a major change in concept or configuration from the original. While the use of slow rate land application has the advantage of increased protection from groundwater contamination, it has the disadvantages of greater land requirements in an area where land is relatively expensive and where the local citizens have already voiced their objections to a treatment plant in their neighborhood. It was not felt that this modification altered the alternative sufficiently to justify further evaluation effort.

W-82. The impacts on public services due to lower development densities were considered in the evaluation of alternatives (p. II-54, DEIS). Furnishing community services and facilities to a given population may require more miles of roads, longer utility runs, more police, more fire stations and personnel, and higher energy consumption and transportation costs. These increased costs cannot be quantified; however, neither can the benefits which some people feel arise from larger lots and greater distances from urban centers. Moreover, as discussed in response to comment W-79, it is felt that the DEIS selected plan will encourage population infilling within the City's service area boundary.

W-83. Costs for wells and sampling were not included in the cost of Alternative 4. As explained in the response to comment W-25, this figure would be difficult to quantify at this time. It is not felt that this cost would change the fact that Alternative 4 is significantly less costly than any of the other alternatives. If implemented by an appropriate management agency, the costs of a monitoring system would most likely be eligible for Federal funding.

W-84. The EIS proposes a groundwater monitoring program that would detect trends in groundwater quality so that contamination requiring renovation can be avoided (see response to W-25). It cannot be assured at this time that EPA would fund a study to determine remedial action should drinking water supplies become affected. A significant effect from the proposed alternative on finished water supplies is considered a very remote possibility.

W-85. First, the failure rate in Leon County has been low. Even without a management system this very low rate would be expected to continue. Should the EIS recommendations be implemented the low rate could be further minimized.

(1) Comment noted.

(2) If a management district is implemented and invested with the proper authority, they will not permit the installation of a poorly designed system.

(3) This may be true, but if the management district enforces the proper siting of systems, development of marginal lands with on-site systems will not be allowed. If a centralized sewer system was available, it would be more difficult to control the development of marginal lands.

W-86. The users would probably bear most of the costs of a management district. These costs are difficult to quantify, but the O&M costs would cover many of the services.

W-87. EPA agrees with this statement.

W-88. The importance of flexibility in the regulations is stressed in the DEIS (see page III-10). As shown on Table I.3.2 of the Draft Alternatives Evaluation Report, a design life of 20 years was assumed for soil absorption fields.

W-89. Yes, provided it can be shown that the failure resulted from improper management rather than homeowner actions. It is conceivable that the management agency may institute some form of homeowner's insurance program that would cover the cost of repairing or replacing the tank or drainfield under any circumstances.

W-90. Comment noted.

W-91. The cost estimates used were obtained from local on-site system installers and represent costs for a conventional on-site system. Properly designed and installed, a septic tank/soil absorption field system should be adequate as a permanent facility.

W-92. Costs for the operation of a management district are difficult to quantify. Much of these costs would be covered by the O&M costs for the system.

W-93. The costs presented in the EIS are for a planning period from 1982 to 2000. Therefore, when present worth costs for centralized collection, treatment, and disposal systems were computed, the salvage values of land, equipment, and structures at the year 2000 were incorporated. The design life of a soil absorption field is assumed to be approximately 20 years (see Table I.3.2, Draft Alternatives Evaluation Report, Volume I) and no salvage values were included in the present worth costs for these systems. By using a present worth analysis the EIS was able to develop comparable costs for systems with different design lives.

W-94. The EIS did not consider a drainfield as "lost land". While wastewater disposal from a centralized system effectively prevents the area from being utilized for other purposes, an on-site drainage field imposes some limitations, but does not prevent the area from being used as a normal yard. Refer to the response in comment W-46 for a discussion of the potential for gardening on a lot with a drainfield.

W-95. Costs for small community systems were not included in the costs for Alternative 4. It would be difficult to quantify the number of small community systems which would be constructed as it depends on future decisions by developers as to the cost effectiveness of a high density development with a small community system compared to a lower density development with individual on-site systems. Moreover, package plants are not the only type of small community system available. For example, costs of a system incorporating individual septic tanks and a community absorption field would be lower than the costs of an extended aeration package plant with a percolation pond.

W-96. It is impossible to determine at this time just exactly what event or combination of events would have to occur to justify re-opening the decisions made in this EIS. A decision to reopen the EIS decision in the future would be made by the Regional Administrator.

W-97. No response necessary.

W-98. EPA agrees with this statement. This is the intention of the management district concept.

W-99. Chapter 10D-6 of the Florida Administrative Code currently regulates individual sewage disposal systems in Florida. County health departments are responsible for permitting all systems which have a daily flow less than or equal to 2000 gallons. The following factors are required by Chapter 10D-6 to be taken into consideration when determining the suitability of an individual on-site system:

1. Lot size
2. Slope and natural drainage features of the lot (including filled area)
3. Proposed lay-out of lot: location, of buildings, water supply well if proposed, proposed treatment/disposal system
4. Proximity to surface waters
5. Percolation test
6. Soil profile
7. Water table elevation at time of site evaluation and estimated water table elevation during the wettest season of the year.

When an entire subdivision is being evaluated for the use of on-site systems, the following additional information is required:

1. Plan of the subdivision
2. Topographic map

3. General site reference map identifying the area

4. Any proposed drainage plans

5. Size and number of units

W-100. Chapter 10D-6 of the Florida Administrative Code (see the response to comment W-99) regulates the installation of wells on lots with on-site systems. Private wells can not be located on lots less than one-half acre if a septic system is used for wastewater disposal. Where a septic system is used, the well must be located a minimum of seventy-five feet from the drain field. Local standards call for wells to be grouted and a concrete apron provided. Wells must be cased for proper operation but the type of casing is not specified. Monitoring of private wells is the responsibility of the homeowner. Public water supplies are the responsibility of the public health department.

W-101. Table III.2 (page III-7 of the DEIS) addresses many of the recommendations discussed in EPA's report under the Mitigative Measures and Corrective Actions columns. The EPA report did go into more detail than the DEIS in the proper installation and operation of septic systems. Their recommendations for proper installation included the following:

1. No heavy equipment on infiltrative surfaces

2. Trenching, boring, or excavating for percolation systems only when soil moisture is below smearing level

3. Use of trenching equipment which does not compact trench sidewalks

4. Use of classified stone sizes in backfills

5. Utilize level bottom trenches and observation well risers at end of each tile line

In addition, the following recommendations for effective operation were given in the EPA report:

1. Alternating loading and resting one-half the percolation system; the cycle to be determined by the onset of ponding in the system at the observation well.

2. Where size of system makes it practicable, loading the entire infiltrative surface of the system at each cycle as uniformly and simultaneously as possible by the use of a dosing siphon.

3. Inspecting and removing scum and grease from septic tanks annually.

4. Drawing off half the sludge rather than pumping out the entire contents.

A more recent EPA publication, Design Manual, Onsite Wastewater Treatment and Disposal Systems, October 1980, contains an even more detailed coverage of the design, siting, installation, and operation of a variety of on-site systems. Rather than try to reproduce this volume of information in the DEIS or FEIS, a reference to this document will be included in the FEIS and will be noted as a revision to the DEIS in Chapter IV of the FEIS, "Revisions to the Draft EIS and Additional Information".

W-102. See the response to comment W-50.

W-103. The following references apply to this statement:

Small-Scale Waste Management Project. University of Wisconsin, Madison. Management of Small Waste Flows. EPA-600/2-89-173, NTIS Report No. PB 286 560, September 1978. 804 pp.

Tyler, E. J., R. Laak, E. McCou, and S. S. Sanhu. The Soil as a Treatment System. In Proceedings of the Second National Home Sewage Treatment Symposium, Chicago, Illinois, December 1977. American Society of Agricultural Engineers, St. Joseph, Michigan, 1978. pp. 22-37.

Harkin, John M., Charles J. Fitzgerald, Colin P. Duffy, David G. Kroll. Evaluation of Mound Systems for purification of Septic Tank Effluent. Wisconsin University, Madison. NTIS Report No. PB80-122807. 1979. pp. 34-52.

The addition of the word "suitable" to the statement in question will be noted in Chapter IV of the FEIS, "Revisions to the Draft EIS and Additional Information".

W-104. The only problem area of septic tank system failures brought to the EIS study team's attention by the Health Department was the area near Meginnis Arm known in this study as the "J-Series". For a discussion of the causes of these failures see pages IV-61 through IV-64 of the DEIS.

W-105. Comment noted.

W-106. Because the DEIS serves to summarize all the work done in the EIS study, it is not the appropriate place for such a detailed list. The Environmental Inventory Task Report also included a reference to this list, but did not reproduce it. For your information, the list is included below.

Fishes of the Ochlockonee River in Leon County, Florida

Common Name	Scientific Name
Southern Brook Lamprey	Ichthyomyzon gagei
Atlantic Sturgeon	Acipenser oxyrhynchus
Longnose Gar	Sepisosteus osseus
Florida Gar	Lepisosteus platyrhyncus
Bowfin	Amia calva
American Eel	Anguilla rostrata
Threadfin Shad	Dorosoma petenense
Gizzard Shad	Dorosoma cepedianum
Alabama Shad	Alosa alabamae
Redfin Pickerel	Esox americanus
Chain Pickeral	Esox niger
Carp	Cyprinus carpio
Creek Chub	Semotilus atromaculatus
Dusky Shiner	Notropis commingsae
Taillight Shiner	Notropis maculatus
Weed Shiner	Notropis texanus
Ironcolor Shiner	Notropis chalybaeus
Coastal Shiner	Notropis petersoni
Ohoopee Shiner	Notropis leedsi
Blacktail Shiner	Notropis venustus
Pugnose Minnow	Notropis emiliae
Golden Shiner	Notemigonus crysoleucas
Spotted Sucker	Minytrema melanops
Lake Chubsucker	Ermyzon sucetta
Channel Catfish	Ictalurus punctatus
Yellow Bullhead	Ictalurus natalis
Brown Bullhead	Ictalurus nebulosus
Spotted Bullhead	Ictalurus serracanthus
Tadpole Madtom	Noturus gyrinus
Speckled Madtom	Noturus leptacanthus
Pirate Perch	Aphredoderus sayanus
Golden Topminnow	Fundulus chrysotus
Banded Topminnow	Fundulus cingulatus
Starhead Topminnow	Fundulus notti
Lined Topminnow	Fundulus lineolatus
Pygmy Killifish	Leptolucania ommata
Bluefin Killifish	Lucania goodel
Misquitofish	Gambusia affinis
Least Killifish	Heterandria formosa
Brook Silverside	Labidesthes sicculus
Mud Sunfish	Acantharchus pomotus
Flier	Centrarchus macropterus
Largemouth Bass	Micropterus salmoides
Suwanee Bass	Micropterus notius
Warmouth	Chaenobryttus gulosus
Bluegill	Lepomis macrochirus
Redear Sunfish	Lepomis auritus
Redbreast Sunfish	Lepomis auritus
Spotted Sunfish	Lepomis punctatus

Common Name	Scientific Name
Dollar Sunfish	Lepomis marginatus
Black Crappie	Pomoxis nigromaculatus
Bluespotted Sunfish	Enneacanthus gloriosus
Banded Sunfish	Enneacanthus obesus
Banded Pygmy Sunfish	Elassoma zonatum
Okefenokee Pygmy Sunfish	Elassoma okefenokee
Everglades Pygmy Sunfish	Elassoma evergladel
Blackbanded Darter	Percina nigrofasciata
Swamp Darter	Etheostoma fusiforme
Brown Darter	Etheostoma edwini
Gulf Darter	Etheostoma swaini
Hogchoker	Trinectes maculatus

Source: City of Tallahassee. Tallahassee - Leon County, Florida 201 Facilities Plan. Appendix A, Environmental Inventory. William M. Bishop Consulting Engineers, Inc. 1977.

W-107. Comment noted.

W-108. Comment noted.

W-109. Comment noted.

W-110. No response required.

W-111. Comment noted.

W-112. The use of federal funds is also being carefully scrutinized. Costs of local government are eventually passed on to the community in the form of taxes or user charges. The centralized wastewater management systems proposed by Alternatives 1-3 in the DEIS would also require increases in staffing and services. Furthermore, the debt from financing the capital costs of a centralized system would also be passed on to the community. The EIS evaluation showed Alternative 4, No-Federal-Action to be the most cost-effective wastewater management system for the study area.

W-113. As discussed in the response to comment W-112, the costs of local government are eventually passed on to the community. The Draft EIS states that, in order to be effective, a public management agency must have the authority to enter property to 1) perform site evaluations and 2) inspect operation and maintenance (see page III-9 of the DEIS). It is reasonable to expect that this authority could be obtained by a local governmental agency. The DEIS also states that this agency must have the authority "To require and enforce repair and replacement of failing systems." It will be necessary to carefully and specifically define system "malfunctions" in order to effectively administer this authority. A revision to the Draft EIS will be noted in Chapter IV of the FEIS, "Revisions to the DEIS and Additional Information."

W-114. The events recounted in this comment show the local government gaining control over the package plants after they have deteriorated. It is the intent of the public management agency concept to impose this control at the planning stage of a small community system and by this control encourage proper design, installation, operation, and maintenance.

W-115. Comment noted.

W-116. The EIS concluded that the overburden is adequate to protect the aquifer. As shown in Figure IV.1 of the DEIS, the two geological formations underlying northeastern Leon County, the area slated for most of the future development, are the Miccosukee and Hawthorn Formations. The St. Marks Formation underlies southeastern Leon County. Further, these water supply wells are located over 200 feet deep providing appreciable protection from significant effect. These formations are described on pp. IV-7 and IV-9 of the DEIS. It is recognized that on-site systems using suitable soils provide renovation of wastewater within several feet of discharge (see response to W-49).

The EIS is concerned with the potential for nonpoint source pollution due to high density development. This pollution of surface waters which discharge directly to the Floridan Aquifer through sinkholes presents a potential adverse impact which may be difficult to control.

W-117. (1) True, small community systems would be more suitable for high density developments. However, the existing and projected development patterns are not high density and are mostly suitable for on-site systems.

(2) The response to comment W-80 discusses the methodology and sources utilized in the development of Figure IV.10.

(3) Percolation tests are currently required by Chapter 10D-6 of the Florida Administrative Code before the approval of an individual on-site system.

W-118. These possibilities were taken into account in the evaluation of the selected alternative. Both the use of a management district and the implementation of a monitoring program are recommended to mitigate the potential adverse impacts due to these possibilities. These mitigative measures are discussed in Part C, Chapter III of the DEIS. Further, the State regulatory programs provide considerable mechanisms to avoid these adverse effects.

W-119. Comment noted.

W-120. Comment noted.

W-121. The interceptor system configuration proposed by the EIS represents a preliminary design effort based on the most cost-effective options under existing conditions. The source of data on stream crossings in the EIS is U.S. Geological Survey (USGS) topographic maps of the area. Detailed field surveys of interceptor routes are not commonly done until the final design of the system.

In order to provide the most economical system configuration, the proposed interceptors were designed to follow natural drainage patterns where land use patterns did not interfere. This permitted the use of gravity lines rather than force mains, thus minimizing the amount of pumping required. Therefore, many of the proposed interceptors in the northeast run parallel to streams, ponds, and wetland systems, and there is a potential for construction impacts on these systems. In addition, there are ten (10) actual stream crossings which are indicated on USGS maps for the interceptors that would not be required under Alternative 4. The figure of fifteen (15) is incorrect in the statement on page III-4. This figure represents the total number of stream crossings for the entire interceptor system (as was proposed, for example, under Alternatives 1 and 2), and should not have been used in this context. A correction will be noted in Chapter IV of the FEIS, "Revisions to the Draft EIS and Additional Information".

Because the field data provided by the City show little flow in the streams shown on the USGS maps, the following revisions to the DEIS will be noted in Chapter IV of the FEIS.

1. The term "primary" will be removed from the last sentence of the second-to-last paragraph on page III-4. In addition, the City's findings will be noted.

2. Under the parameter "Surface Water Quality" on page IV-71 and "Aquatic Ecosystems" on page IV-72, all impacts from sedimentation due to construction activities will be changed from "major" to "significant".

It should be noted, however, that the field data presented by the City was collected at a time when Leon County had been experiencing an extended dry period. EPA agrees that the potential impacts addressed in this comment can be mitigated to a great degree through good construction practices.

W-122. The description or interpretation of a moderate limitation for sanitary facilities given in this comment is not complete. The U.S.D.A. National Soils Handbook, Rating Soils for Selected Uses, provides the following definition for a moderate limitation rating :

> Moderate is the rating given soils that have properties moderately favorable for the use. This degree of limitation can be overcome or modified by special planning, design, or maintenance. During some part of the year, the expected performance of the structure or other planned use is somewhat less desirable than for soils rated slight. Some soils rated moderate require treatment such as artificial drainage, control to runoff to reduce erosion, extended septic tank absorption fields, extra excavation, or some modification of certain features through manipulation of the soil. For these soils, modification is needed for those construction plans generally used for soils of slight limitation. Modification may include specially designed foundations, extra reinforcement of structures, sump pumps, and the like.

The referred publication by Richard Guthrie and Gerald J. Latshaw USDA, SCS, entitled "Soil-Potential Ratings for Septic Tank Absorption Fields in Leon County, Florida" is an article describing a local effort whose task was to develop soil potential ratings in order to better supplement the SCS uniform or national rating scheme for soils and selected uses.

The USDA, SCS was instrumental in getting this pilot project to test soil-potential rating procedures for septic tank absorption fields started in Leon County. Close coordination between the SCS State Soil Scientist's Office and local offices was necessary to assemble a multi-disciplinary team of soil scientists, planners, engineers, sanitarians, and local septic tank contractors for local input during the planning process.

The USDA, SCS provided technical assistance regarding soil survey procedures and interpretations but did not provide input regarding the development of corrective measures. Local contractors who install septic tanks identified corrective measures that they use to overcome soil limitations.

Corrective measures and the continuing limitations associated with the use of soil absorption systems in various soils are the results of the local planning process. Therefore the corrective measures listed on the worksheets, Table 2, represent the techniques presently considered feasible for overcoming various physical constraints encountered by local sanitarians and septic tank contractors. The corrective measures identified on the worksheet should by no means be taken as an absolute, for in many instances an expansion of the soil absorption field should be designed with respect to the soil permeability for saturated conditions.

W-123. Concern over public health risks associated with land disposal of treated wastewater on the proposed SW land application was one of the issues which led to the EIS. For a discussion of the issues which led to the initiation of the EIS refer to pages I-1 through I-3 of the DEIS. Based on the results of this EIS, EPA sees no reason to expand the SW sprayfield. If the City elected to expand the capacity of the T.P. Smith/Southwest plant using local funds they could still consider the SW site as an effluent disposal alternative. It would be their responsibility to address potential health risks associated with further development of this site.

W-124. See the response to comment W-123. The EIS concluded that the potential health risks associated with the Southeast sprayfield, even if expanded, were minimal.

W-125. EPA determined that health risk data would be collected at the SW spray field if its expansion was part of an alternative being considered.

Without knowing which studies the City is referring to it is impossible to respond specifically to this comment. Several studies on the health effects of land application were considered in the Alternatives Evaluation Task. These studies are listed on page R-5 of the Draft Alternatives Evaluation Report. The conclusions of these studies were not consistent and it cannot be inferred from a review of the documents that there is little or no health risk associated with properly operated land application systems. A discussion of public health concerns related to land application systems can be found in the Draft Alternatives Evaluation Task Report, Volume II, pp. VI-53 through VI-66.

W-126. These statements were based on a preliminary screening of land application sites which was part of the Alternatives Development Task. Further scrutiny of the needs and available sites in the Alternatives Evaluation Report led to the decision to utilize the Southeast site for flows greater than 17.5 mgd. See the response to comment W-26.

W-127. As the U.S. Department of Agriculture (USDA), Soil Conservation Service (SCS) Soil Survey of Leon County, Florida was not published at the time the EIS evaluation of land application sites was being done, the consultants utilized interim SCS data that had been transferred to U.S. Geological Survey (USGS) topographic maps by the Tallahassee - Leon County Planning Department. Copies of these maps reveal that the predominant soil series at the proposed SW land application site were shown to be Leon fine sand and Albany variant fine sand. These soil series are characterized by moderate to moderately rapid permeabilities, however, the depth to the season high water table is indicated as 1.0 foot or less and 1.0 - 2.5 feet respectively.

Furthermore, the USGS topographic maps of the area show a generally low-lying area with depressions and some actual ponding. Wetlands are shown approximately 2,000 feet southwest of the site. The conclusions in the EIS were based on this information.

The recently published soil survey indeed reflects several soil series name changes with respect to the tenatively assigned names as referenced in the Interim Soil Surveys. Significant areas in Leon County previously mapped as Albany loamy sands more appropriate fall into the range of characteristics of the recently established (1977) Ortego series. A similar situation exists with the range of characteristics of the Plummer series in the interim survey better fitting the diagnostic description of the Blanton Series.

In the SW sprayfield area the more gently rolling sectors consist of deep well drained sands. The Kershaw series was ferientated in the advanced soil survey to a more limited extent than in the final survey mapping. The Kershaw series was originally delineated only on the higher topographic settings. Subsequent checks of the interim SCS mapping effort reveals a more extensive coverage of the Kershaw series. Some error is encountered in the interim data in the interpretation of soil mapping units when the basic SCS data at a scale of 1 inch equals 1,760 ft. was transferred to a 1 inch equals 2,000 ft. scale by the Tallahassee - Leon County Planning Department. Problems with incomplete soil mapping boundaries resulted in more extensive areas of the Leon soil in regions where the Kershaw series would normally occur.

Based on the recently published soil survey, expansion of the SW sprayfield does not appear to be limited by soil and water table conditions.

PART B. ORAL COMMENTS

Index to Oral Comments

Comment	Name	Agency
T-1, T-2	William G. Leseman	City of Tallahassee, Water Quality Lab
T-3 through T-8	Glenn Dykes	Florida Department of Environmental Regulation, Drinking Water Program
T-9	T. Michael Schneider	City of Tallahassee, 201 Program
T-10, T-11	Rhett White	Leon County Health Department
T-12	Jessie Brown	Munson Area Preservation, Inc.
T-13 through T-17	John Koelemij	Tallahassee-Builders
T-18 through T-27	J.D. Boone Kuersteiner	Falls Chase Special Taxing District

Before the

ENVIRONMENTAL PROTECTION AGENCY
WATER MANAGEMENT DIVISION
REGION IV
ATLANTA, GEORGIA

- - - - - - - - - - - - - - - - - - -
In the matter of: :
:
ENVIRONMENTAL IMPACT STATEMENT :
ON PROPOSED WASTEWATER MANAGEMENT FOR THE CITY OF TALLAHASSEE, :
LEON COUNTY, FLORIDA :
:
- - - - - - - - - - - - - - - - - - -

DER Courtroom
Fourth Floor
Department of Energy
Twin Towers Office Bldg.
Tallahassee, Florida

Thursday, November 5, 1981

The above-entitled matter came on for hearing, pursuant to notice at 7:30 p.m.

BEFORE: PAUL TRAINA,
Director Water Management
Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30308
1(404)881-4450

MR. VAN HOOFNAGLE,
State of Florida Department Environmental Regulation
Suite 500
2600 Blair Stone Road
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MR. BOWMAN CRUM
EPA Project Officer

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PROCEEDINGS

7:30 p.m.

MR. TRAINA: I'd like to call this hearing together tonight. I want to welcome you all to this public hearing on the draft Environmental Impact Statement on the proposed wastewater management for the city of Tallahassee and surrounding areas of Leon County, Florida.

I would like to begin by introducing the hearing panel. First, my name is Paul Traina. I am Director of the Water Management Division of the Environmental Protection Agency of Region IV in Atlanta, Georgia. To my immediate left is Mr. Bowman Crum, who is the EPA Project Officer on this project. And on his left is Mr. Van Hoofnagle with the Florida Department of Environmental Regulation.

The purpose of this evenings hearing is to receive public and other agencies' comments on the wastewater management proposal contained in the draft Environmental Impact Statement for Tallahassee and Leon County, Florida. This environmental Impact Statement is being prepared on wastewater facilities proposed in the 201 Facilities Plan prepared for the City of Tallahassee by William M. Bishop, Consulting Engineers, Inc., Tallahassee, Florida.

The preparation of this EIS is authorized by the Federal Clean Water Act and the National Environmental Policy Act. The Federal Clean Water Act enables the EPA to fund up to 75% of the eligible costs for the planning, design and construction of wastewater facilities. The planning phase of this process results in the preparation of a facilities plan. In this instance, the City of Tallahassee has been designated as the local agency responsible for facilities planning in this area. The National Environmental Policy Act, NEPA, requires Federal agencies to prepare and Environmental Impact Statement on major Federal actions significantly effecting the quality of the human environment. Because of the environmental complexities and water quality issues involved in this project EPA made the decision to prepare an EIS on the completed 201 Facilities Plan. Accordingly, in November of 1978 the Notice of Intent to prepare an EIS was issued. Pursuant to the guidelines of the President's Council on Environmental Quality and the rules and Regulations of EPA, with regard to the preparation of EIS's, this Public Hearing is being held to receive comments on the draft EIS.

The draft EIS and Facilities Plan are being discussed in a public forum to encourage public participation in the Federal decision-making process and to develop improved public understanding of federally funded projects. In this regard, the draft EIS was made available to the public and EPA's office of Federal Activities in Washington, D.C. on September 17, 1981. And was listed in the Federal Register on September 25, 1981. The draft, EIS, comment period will extend until November 20, 1981. The comments received during this evening and during the comment period will become part of the record.

I'd like to let you know now that the proceedings tonight are being recorded. We have a private consultant here who is recording the proceedings, Mary Lou Stokes. These proceedings will be available in our offices in Atlanta. And for those of you who would care, I'm sure you can make arrangements with Ms. Stokes if you'd like to receive directly a copy of these proceedings.

At this point, I would like to introduce and have Mr. Crum, who's the EPA Project Officer, provide us with a brief summary of this project.

Mr. Crum.

MR. CRUM: Good evening. This draft, Environmental Impact Statement or EIS, has been prepared in response to issues raised in opposition to portions of the Tallahassee, Leon County 201 Facilities Plan. The draft EIS addresses wastewater management needs for growth areas which will not be served by 201 facilities already approved by EPA. Through the EIS process alternatives for wastewater management in the study area were developed and evaluated and a perferred alternative was selected.

The draft, Tallahassee-Leon County 201 Plan, was approved in April of 1977 by the City and County Commissioners and received initial approval from the Florida DER and the EPA. The EPA subsequently made a decision to initiate grants for the design of only those facilities which would recieve or relieve existing water quality problems. This decision was made in part due to the opposition of citizens and private organizations to portions of the 201 Plan. It was further decided that an EIS would be prepared on those portions of the 201 plan that may result in significant environmental impacts.

The wastewater facilities which EPA has already approved and many of which have already been constructed provide for a total capacity of 17.5 million gallons a day or MGD at the Southwest and TP Smith Plants and the Southeast sprayfield. Also a new seventeen and a half MGD sludge handling facility and additional interceptors and pump stations have been approved for construction. Those facilites proposed by the 201 plan, which are covered by this EIS, are a new 5 MGD Northeast Treatment plant, a sixty thousnd linear foot forcemain from the Northeast plant to the Southeast Sprayfield; expansion of the TP Smith Plant beyond 15 million gallons a day; additional interceptors to growth areas, mostly in the northeast.

This EIS was prepared because of issues raised by several organizations and individual citizens. These issues are summarized as follows: Number one, Public health risks may be associated with land application of wastewater; Number two, wastewater flow projections in the 201 plan may be too high; Number three, adverse impacts to wetlands may result from development in northeast Leon County; Number four, a wastewater treatment plant in the northeast may be incompatible with the residential use of the area; five, the construction, operation and maintenance of a forcemain from the projected Northeast Plant to the Southeast Sprayfield may have adverse impacts on the wetlands and the dam at Lake Lafayette; Number six, renovation of the Lake Bradford Plant may be more cost effective than closing it; and issue Number seven, concern that any of the alternatives may have adverse impacts on the habitats of threatened and endangered plants and animals. With these issues as a basis for the EIS an inventory of existing environmental conditions was conducted. The EIS then screened the available collection treatment and disposal options for wastewater management and determined the most feasible options appropriate for the study area. Flow and waste reduction measures were considered for the study area by the EIS and was evaluated with and without and each alternative, excuse me, was evaluated with and without flow reduction. These wastewater management alternatives were then evaluated and a preferred alternative was selected. The alternative management systems developed and evaluated by the EIS are Alternative System 1(a), this alternative would include a new treatment plant in the northeast with disposal by rapid infiltration. Expansion of the TP Smith and Southwest facility with disposal at the Southeast Sprayfield and additional interceptors to growth areas. Alternative System 1(b) is the same as 1(a) except that the Northeast plant affluent would be disposed of at the Southeast Sprayfield.

Alternative System 2 uses existing facilities as a regional treatment system without the implementation of flow reduction measures, continued operation of the Lake Bradford Plant and an expanded TP Smith, Southwest Plant would serve the entire sewered area. With the implementation of flow reduction measures, an expanded TP SMith-Southwest Plant alone would serve the sewered area as the regional facility. All disposal would be at the Southeast Sprayfield and this alternative also includes additional interceptors to be constructed.

Alternative System 3 would consist of a Southeast treatment plant to supplement the TP Smith-Southwest facility with disposal at the Southeast Sprayfield, also additional interceptors will be constructed.

Alternative System 4 is the no-federal action alternative. Under this alternative expansion of the present wastewater system will continue until all of the facilities already approved for construction by EPA are completed. New growth in wastewater generation would be handled by on-site and small community systems. Population in-filling will take place in the city service area and some additional sewering will be necessary. To be constructed under this alternative is most of the proposed southeast system of interceptor sewers including the "J" series interceptors and the McGinnis Arm area of Lack Jackson.

Alternative number four has been selected by EPA to be the preferred alternative for the draft, EIS. This alternative was determined to be the most cost effective and environmentally sound wastewater management alternative.

The remainder of the phase 1 facilities, which have been approved by EPA, will serve all existing and some future needs. The EIS projected at by the year 2000 the wastewater flow from within that area now served by the city, without flow reduction measures will approximate the available seventeen and a half MG cap -- MGD capactiy at the TP Smith-Southwest -- Southwest treatment facility. The projected growth areas are suited to the use of on-site and small community systems. Data on soils in the growth area support the use of on-site systems. The Leon County Health Department indicates that on-site systems operate properly when their construction follows the basic rules governing their placement. The few failures of on-site systems that have occurred in the northeast growth area are a result of poor siting and pure construction.

The importance of ground water quality in an area where ground water is the sole, potable water supply is the most critical consideration. The EIS shows no significant adverse impact to ground water quality from the use of on-site and small community systems in the growth areas. The impacts on downgrading at city water supply wells were fully considered in the selection of alternative number four. The geological formations in northern Leon County, including the projected growth areas, should provide adequate protection for the drinking water aquifer for Florida inaquifer.

Another issue of the EIS is that potential detrimental impacts to wetlands may result from development in northeast Leon County. Properly implemented, the recommended alternative decreases the potential for development in marginal lands and environmentally sensitive lands, such as the wetlands, floodplains and high ground water areas. For the implementation of alternative four, the importance of proper siting, construction and operation and maintenance of on-site and small community systems cannot be overemphasized. When managed competently, on-site systems and small community systems are cost effective and environmentally sound.

It is recommended that the implementation of alternative four include several measures at the local level which will serve to mitigate potential impacts. The primary recommendations are as follows: revisions of the basic rules governing septic tank use to allow for systems more suited to current and future demands. These revisions should include siting criteria, basic system design and the use of alternative systems. The implementation of a management district or other means of on-site systems management to promote efficient operation is also recommended. The third recommendation is that monitoring of ground water quality in developing areas of Leon County to assure early detection should ground water quality problems occur. The focus of this program would be to identify cumulative area-wide impacts on ground water.

In conclusion, it should be emphasized this EIS addresses a federal action only. And that action is the provision of federal funds for the construction of the proposed facilities. This decision affects only the use of federal funds. The City and County are free to proceed with additional wastewater management programs that are locally funded provided they meet state and EPA Permit requirements.

Thank you, Mr. Chairman.

CHAIRMAN TRAINA: Thank you, Mr. Crum.

I'd like now to ask Mr. Van Hoofnagle to make a statement on behalf of the Florida Department of DER.

MR. HOOFNAGLE: Thank you, Paul.

Good evening. My name is Van Hoofnagle, I work in the bureau of Wastewater Management and Grants, specifically in the 201 program. I have been involved in the TAC group for the last several months and have had the opportunity to review this document. However, we have had several other bureaus within the Department that have not had the opportunity to completely review so I would like to ask Mr. Traina and Bo if they would extend the comment period beyond November 20th.

CHAIRMAN TRAINA: Yes, that'll be granted.

MR. HOOFNAGLE: I don't have any other requests or statements at this time.

CHAIRMAN TRAINA: Thank you.

Okay. You've heard from the federal and state bureaucrats now it's your meeting. That's what this is all about, it's a public hearing, public meeting, to hear your comments. I would ask that those of you who haven't yet filled out a yellow card please do that. That'll do two things for us. First, it will tell us when -- or tell our bosses when we get back to Atlanta, and in the case of Van in Tallahassee, that people really showed up at this meeting and it was worth their while to pay for our trip here. Secondly, it will put you on a mailing list to receive the results of this hearing and any other information that you might want. And the other thing is that I'm going to proceed now and call people who've indicated on this card that they would like to make a statement. And that's in the order that I will follow, that is the order in which you've registered. When I do call your name, I would appreciate your coming up to the podium. If you will, identify who you are. If you do represent someone let us know that and if you have a written copy of your statement we would appreciate getting a copy so that we can follow along with you. Before I get to that let me ask, are there any elected officials here at the local level? We'd certainly like to recognize those if they'd like to get up and be recognized and make a statement. Is the Mayor here, any of the Councilmen or women here or anyone else? Okay.

Let me then proceed and call on Mr. William G. Leseman.

MR LESEMAN: My name is William Leseman with the City of Tallahassee Water Quality Lab. Okay. One of the major issues, major items subject to EIS study was the expansion of the two acre southwest Sprayfield. In Mr. Crum's summary he stated that the EIS was initiated because of the following issues raised by organizations and individual citizens. Number one was that public health risk may be associated with the land application of wastewater. Now, what I wish to do is to go through the several different volumes or preliminary plans of studies and plans of studies and the various assundry plans that came out in somewhat of a chronological order using the words of the consultant and not my words to carry you through this evaluation, or proposed evaluation.

To start off with, the preliminary plan of study, which was in April, 1979, and the facilities associated with the second phase of the proposed 201 plan which have not been permitted to proceed and are being investigated by the EIS are as follows: Construction of a 2,000 acre southwest spray irrigation field . . .

CHAIRMAN TRAINA: Excuse me, Mr. Leseman. Can everyone hear him in the back?

(No audible answer.)

CHAIRMAN TRAINA: Okay. Thank you. Go ahead, Mr. Leseman.

MR. LESEMAN: Construction of two thousand acre southwest spray irrigation field adjacent to the TP Smith plant, okay.

I'll give you page numbers on these so -- just for the record.

I'm on page 4 of the preliminary plan of study.

CHAIRMAN TRAINA: What -- do you have a prepared copy of your statement?

MR. LESEMAN: No, I've just got xeroxed copies of this.

CHAIRMAN TRAINA: Okay, fine.

MR. LESEMAN: (Quoting)

"Impacts of construction on operation of alternative spray irrigation sites: Potential impacts to be evaluated include public health hazards due to aerosol or ground water transport of viruses, bacteria or hazardous pollutants. Impacts to property values and impacts to endangered species and buffered zone vegetation. Furthermore, changes expected to occur to the ecosystem of the spray site through it's design life, the ultimate use of the site and the ultimate fade of any nutrients, bacteria or viruses discharged at the site will be thoroughly discussed for the reasonable alternatives."

Okay, we go over here to page 23.

"Initiate Monitoring Program and Collect Data: The intent of the monitoring program is to supplement background information, permit quantification of existing conditions and aid in identifying and assessing potential

> impacts for proposed alternatives. This task will require field trips to the study area by project personnel. As specifically described in Appendix (b) the monitoring program will focus on two main areas; monitoring of sur face waters and sediments and monitoring the current sprayfield to allow projections of impacts of expanded spraying".

Basically what I'm trying to do here is to outline, as I have read it in here, what the original plan was and to carry it through as to what was the ultimate output.

CHAIRMAN TRAINA: Mr. Leseman, is it fair to ask you at this point as to whether or not you're agreeing or disagreeing with the tentative federal decision on this project?

MR. LESEMAN: I'm disagreeing with the decision based on the fact that the decision was made on data which is false.

CHAIRMAN TRAINA: Okay, thank you.

MR. LESEMAN: Which I plan on showing.

> "Potential land application sites will be identified based on proximity to existing and future wastewater generators.

This is on page 36.

Okay. Now we come over here to preliminary study background task report, page 35. Again,

"Issues of local concern:

Number one is,

"How spray irrigation impacts:

Come down here to.

"Spray irrigation impacts:

on page 35;

> "several health or risk assessment associated aspects of land disposal merit consideration in evaluating impacts on potential southwest sprayfield sites. First, residents near the small existing site have voiced concern that aerosols generated during spraying could transmit bacterial or viral diseases. Second, given the sand overlaying caustic limestone nature of this geological subunit, Woodville Carts Plane, there may be a potential for ground water contamination with bacteria or viruses due to rapid passage, absorption, ellution, channelling or other perhaps poorly understood mechanisms."

Finally,

> "Concerns exist that animal vectors could spread disease from the site.

Again, pointing out what the study is to look at, go over here to the second segment plan of study, preliminary May 1980. Again, in the introduction it states;

> "Number one, the spray irrigation impacts, concern has been raised for public health risk associated with transmittal of bacteria and viral diseases from spraying operation and subsequent ground water contamination, as well as disease transmittal from the site by animal vectors."

Also number eight states, on page 2,

> "General concern has been expressed about long-range impacts from the sprayfield and buffer zone vegetation as well possible devaluation of local residential property."

Page number 3,

> "Those actions which will be covered by the EIS include number 3, proposed two thousand acreas southwest spray irrigation field. Okay, so

> three separate documents we have stated that the southwest field is going to be one of the main focuses of concern."

Okay, I'm now speaking from the environmental inventory task report, page number 5,

> "The EIS was initiated as a response to a number of issues raised by organizations and individual citizens during the 201 study and during the review period after the negative declaration issued by EPA in February 1978. A summary of these issues follows:
>
> Number one, spray irrigations impacts:"

Again, the same paragraph,

> "concern has been raised for public health risk associated with land disposal of treated wastewater on the proposed southwest sprayfield sites,"

et cetera, et cetera. The environmental monitoring program, segment 1, draft report, April 1980. Page number 3,

> "In the Tallahassee EIS one of the major concerns of spraying sewage effluent on land is the potential con-

> tamination of ground water resources which are heavily utilized in Tallahassee and the State of Florida. The comprehensive monitoring program at the TP Smith wastewater rennovation plant spray site was established to quantify the hydrogeologic and the chemical effects of sewage effluent disposal on ground water in the vicinity of the plant. This program was undertaken by the USGS in 1975 which owns and operates thirty wells and the surrounding spray field area for monitoring purposes. In addition to the USGS has a sampled and tested ground water from privately owned wells near the spray site. However, this comprehensive program, which includes testing of a variety of chemical and biological parameters does not test for the transport of virus in the ground water."

On the same page it says.

> " Since the USGS monitoring program for the chemical bacteriological data seems adequate no additional work was recom-

> mended as part of the first segment of EMP."

So on the same page they said they don't monitor for viruses in the ground water but that's okay, although the first, I think, four different volumes that I stated said that one of the major areas of concern was to look at the effects of viruses and bacterial contamination.

Okay. On page number 4, the bottom of the page;

> "A microbiological study of land disposal effluents was not included in the first segment EMP. Such a study would be site specific and would be contengent upon the inclusion of land disposal in the list of reasonable alternatives. As such, a microbiological study is being considered in the second segment, EMP, plan of study."

Okay. Well, so far we've had that the main goal is to study this because that's the whole reason that people do not wish to have the southwest sprayfield utilized and it's kind of been a "we'll do a end-run and we won't have to look at it". So, now we come over here to the environmental monitoring program, segment 2, terrestrial survey. Back here we stated that based on the alternatives we'd determine whether a microbiological study was really necessary. So we go on here and we look and see if the spray field is really a viable alternative.

> "Potential sprayfield sites . . .

again this is the environmental monitoring program segment 2, terrestrial survey, page 36.

> "Potential sprayfield sites with adequate disposal capacity were present at five locations."

number one.

> "Southwest sprayfield expansion"

Okay, so it's got enough capacity according to the consultant.

> "Alternatives development task report."

Page 89.

> "Slow rate land appllication is presently utilized in Southwest Leon County. The city of Tallahassee disposes of approximately 1.5 million gallons per day of it's treated effluent on land adjacent to it's TP Smith southwest treatment facility. IN 1972 soils explorations for structural foundations of the site should sands exist up to forty-five feet below the surface . . .

remember the term forty-five feet below the surface.

> "These sands of the Lakeland series, which charaterizes a large portion of the soils in the southwest overlay the St. Marks' formation of the Florid inaquefer and are capable of accomodating very large hydraulic loadings."

very large hydraulic loadings.

> "In the southwest the proximity of the Apalachicola National Forest and the potential for a land swap with the city of Tallahassee makes slow rate land application a viable alternative in this area. Investigations for suitable land application sites will include examining the potential for expanding the city's present disposal site in the southwest as well as examining potential sites within the Apalachicola National Forest, less approximate to residential areas.

Page 91.

> "As in the Southeast, the southwest too will be investigated further for possible rapid infiltration sites.

> The current land disposal site in the southwest and other sites within the Apalachicola National Forest will be examined for possible disposal locations as described earlier. The soils are capable of accomodating large hydraulic loadings, making the area minimal to this method of treatment disposal."

Well, so far so good. Looks like you may have to go back and do the microbiological monitoring. Okay we come over here to the draft, Alternatives Evaluations, volume two, Detailed Analysis Task Report, page I-7.

> "The EIS was initiated as a response to a number of issues raised by organization and individual citizens during the 201 study and during the review period after the negative declaration issued by EPA in February 1978. A summary of these issues follows. Number one, land application impacts . . ."

et cetera, et ccetera, the same paragraph you've seen elsewhere. Come over here to page Roman numeral VI-IX.

> "An evaluation of the suitability of land application within the Tallahassee-Leon

> County study area must also consider the parameters shown in table 2.62. The EIS evaluation procedure began by simultaneously analyzing detailed soils of information."

I stress detailed soils of information.

> "Vegetation Maps and Aerial Photographs: Potential land application sites in each of the proposed service areas were identified and a terrestrial survey of the potential sites was conducted by the EIS study consultant. For some parameter, such hydraulic conductivity CAT unexchanged capacity, sodium absorption, land acquisition methods, follow up discussions and field tests at the recommended sites may need to be conducted."

I would consider that if I was going to be looking at a site for spray irrigation that hydraulic conductivity would probably be one of the first things I looked at and back here I thought it said detailed soils analysis, but, okay, we should go on. We come up here to a paragraph on page Roman Numeral VI-LXI which states;

> "The potential southwest site with it's

> predominate Albany and Leon fine sands has excellent bacterial and viral removal characteristics but the site is marked by a shallow water table during the wet months of the year."

You remember the forty-five that I mentioned earlier, forty-five feet ground water. Somehow I don't think that forty-five feet is shallow. If you'll get the United States Department of Agricultural Conservation Service Soils maps out, you'll find that there is no Albany variant and there is no Leon fine sand in the Southwest site. I have the soil legend here, which the predominant soils in the area are curshal sand, ortega sand, alpine sand and blem fine sand with hydraulic conductivity rates that range from 21.5 inches per hour to 4.7 inches per hour as a hydraulic conductivity. So somewhere along the line somebody got some misinformation considering we've been doing spray irrigation at this particular location for many years and have applied very high hydraulic loadings. The fact that the site was abandoned because the soil is quote "subject to flooding" which has never been observed in the area, I think, is a piece of data that the EPA should look very closely at when evaluating this entire study. T-1

Thank you.

CHAIRMAN TRAINA: Thank you, Mr. Leseman. Excuse me, could you just -- let me just make a comment that if I had any doubt as to what your position was in the beginning of your statement, it's certainly been clarified. I take it that you don't -- you not only disagree but you somewhat -- I wouldn't say vehemently, but you certainly positively disagree with the findings of the EIS. Is that a correct surmise on my part?

MR. LESEMAN: That's correct.

CHAIRMAN TRAINA: Let me ask you, Mr. Leseman, are you representing the City. Is this the City's official position?

MR. LESEMAN: No, this is not the City's official position. I am simply pointing out some of the things which are supposedly fact, which are indeed not fact.

CHAIRMAN TRAINA: I'd like to ask Mr. Crum if he'd like to comment back on that.

MR. LESEMAN: Okay.

CHAIRMAN TRAINA: I think you've raised some rather interesting points. Now how valid they are, I don't know.

MR. CRUM: Okay, it's, I think, it's very difficult tonight to answer each one of the points you've raised specifically. I can assure you that in the final EIS we will. I think probably one thing that you've pointed out that I think's been a concern for some time is that the lack of a microbiological study, the study of viruses, and I think our position has been, for some time, that if a southwest sprayfield had been part of an alternative considered for the draft Environmental Impact Statement that we would perform that study. And that -- we've said that and I think that's been our position.

MR. LESEMAN: I agree, that's exactly what you said, you know, if there was an alternative you'd do the work and then you eliminated it based on false data.

T-2

MR. CRUM: Okay, so that's . . .

MR. LESEMAN: That's the main concern.

MR. CRUM: I can assure you that we will address each one of those points of -- that you perceive to be or whatever false data and -- in -- comprehensively in our final EIS.

CHAIRMAN TRAINA: Let me suggest, Mr. Leseman, that if you can, summarize those questions. Because I think it might be difficult to get them out of the transcript. So if you can send us that in writing we would appreciate that.

MR. LESEMAN: I will.

CHAIRMAN TRAINA: Thank you very much, sir.

MR. LESEMAN: Thank you.

COURT REPORTER: May I ask for a moment. I'm picking up a radio station.

CHAIRMAN TRAINA: A radio station.

COURT REPORTER: I'd like to be sure we're getting a recording.

CHAIRMAN TRAINA: I certainly hope it's nice music.

(Brief pause while Reporter changed tapes.)

COURT REPORTER: We're ready.

CHAIRMAN TRAINA: All right, thank you.

I'm not to sure here, both, under "Do you wish to speak?", I think both a "yes" and a "no" might have been indicated. So let me just ask; Mr. James Carter, would you like to make a statement, sir?

MR. CARTER: No, no.

CHAIRMAN TRAINA: Okay.

MR. CARTER: I didn't have my glasses on.

CHAIRMAN TRAINA: You can't speak without your glasses; is that it?

MR. CARTER: No, I didn't have them on when I filled out the card.

CHAIRMAN TRAINA: Oh, okay. I have that problem too, I can't speak without my hands.

Okay. Mr. Glenn Dykes, with the Florida Department of Department -- Environmental Regulations, excuse me.

MR. DYKES: I didn't get up while ago when the State, you said you had said everybody in the State had spoken but I didn't want to be first in line.

CHAIRMAN TRAINA: Well I realize that in Florida that not one person represents the DER. I learned that after 25 years working in this area.

MR. DYKES: I don't know why you figured that out, Paul, I mean . . .

CHAIRMAN TRAINA: So, we welcome any and all opinions from the DER.

MR. HOOFNAGLE: We have that trouble in EPA, too.

CHAIRMAN TRAINA: Yes, I know. It's very rare that I get the opportunity though to say the same about the State. I guess that's on the record.

MR. DYKES: My name is Glenn Dykes, D-y-k-e-s. I'm a professional Engineer and Administrator of the Drinking Water program for DER. I have been employed 25 years in the drinking water program for the state and, of course, our main concern as you well realize is protection of the ground water resource. Since 90 -- 92%, the percentage keeps going up as we add more plants, of course, they keep taking from the ground water and that's getting higher and higher and I think that's primarily why I would like to address some of my concerns, with regard to the EIS.

I would concur that it's cheaper to take no action. I would debate whether or not it's environmentally sound. The ostrich approach, I think, has been tried a number of times. I think it only comes back to haunt us later on. And I think planning in the near sight is a heck of a lot better than the far end when we have to buy up some of these -- these plants, or end up with some counties with 200, 300 wastewater treatment plants with no means of combining them all together. And then we've got 200 to 300 headaches that somebody has to operate, maintain and try to monitor, which there's very little monitoring being done.

The alternative states that there is no problem or potential problem from -- or ill effects on the ground water quality. This, too, I would debate since I think the basic water supply for this particular community does, no doubt, come from the north. Northeast, more than likely, would supply some of the city's wells. In the carstopography the lakes, sinkholed controlled discharge into sinkholes, some of the areas we're not too sure and what the overburden is over the limestone. And I really didn't see that many soil borings to make too much determination on as to what the overall quality of, or protection of, the ground water resource there is. I did look at the septic tank map and if all of those shaded areas are supposedly adequate for septic tanks I would debate that because my house sits in one of those shaded areas and I would hate like hell to have to dig through that clay to get a septic tank in 'cause I don't think it would work to well. So, I would debate the map if that's what that shaded area really is supposed to be, that that's acceptable for septic tank installations.

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T-4

Of course it was brought up that there may be some potential threat from the carstopography and I think we would all agree that with some of the lakes -- like I'm on -- you're discharging directly into sinkholes. Lake Lafayette is a sinkhole control. Certainly this is a problem and I think we'd have to address it somewhere down in the future.

Insofar as on-site treatment plants, I think, as I indicated there are a number of counties in the state that have proven that this is almost a disasterous approach. When you've got two to three hundred of them and then the county comes in to take over the operation or tries to combine it into an overall utility for the county, it's one bunch of nightmares. And we've had some that, you know, they've tried to do it for years and we've still got all the on-site sewarage treatment plants. I would debate, even if they're constructed properly, that they're going to be operated and maintained. Because that's some of our biggest headaches in water and wastewater, is operation of the small systems. I think it's always been a better approach, from a regulatory agency standpoint, if we can combine them into bigger systems, to get rid of the three hundred headaches and try to avoid them, if at all possible. From that standpoint, I think it's false planning to say that we're going to go or sit and the future or the year 2000 is going to depend on on-site disposal facility. I think that's really a backward

T-5

approach, it's regression. I think we've passed that point in the state of Florida and I think a thriving state, like Florida, has to look a little bit further and I think we have to plan for this. The monitoring of the small plant certainly is not going to be as good as some of the data that I'm sure Mr. Leseman can provide on teh wastewater facilities for the city of Tallahassee, he probably gets reems of it. Tom, back there, he can probably -- has to look at some of the reems of data that's generated by the test facilities that he has, but I'm sure that you're not going to get -- you'd be lucky to get one sample per month out of any on-site treatment plant. And, of course, with on-site septic tanks and particular multiple housing septic tanks which I saw recently a recommendation in Manatee County that HUD was recommending big septic tanks for apartment complexes. I think, here again, we're going backwards with some of our activities.

There was also some discussion about use of cover crops. It implied that some of the small treatment plants of the uptake -- and I don't think we're going to have any major landspreading operations on any on-site treatment plant. Most of the them will be perch ponds, if we're lucky and if we're lucky they won't find a hole in the strata and go right straight down into it like we have in some areas of the state.

T-6

The overall approach, as I see it and as I read it, I think is contrary to the ground water strategy of EPA, which is set up to protect the ground water resources, particularly those that are potable. And I see this as a direct opposition to that strategy. The economic feasibility overall, I think if we're going to consider some of the costs of this approach of doing nothing and let nature take it's course and let's see how many treatments plants or septic tanks, maybe at 35% treatment of the waste, can contaminate the water supply. And the potential threat does turn into a real threat, then we have to look at complete treatment for the city system, on the water supply side. And that doesn't come cheap when you've got wells spread out all over this county and then you've got to readdress the distribution and put in two or three plants, maybe, and that's not as economical, of course, as putting in one, but there's an awful lot of costs that would be involved in that approach. Overall I would think that at present we might possibly, it's not feasible to extend in some of these areas, maybe the density isn't great enough. And the no action status may be appropriate here but I think in the long range, I don't think it is. I think we've got to look a little bit deeper than that and to plan, at least plan for trunk lines to pick up the sewage as it's developed in the future.

T-7

T-8

Thank you.

CHAIRMAN TRAINA: Thank you, Mr. Dykes. That was a very thoughtful statement and we appreciate it. I assume, Mr. Dykes, that the reason Mr. Hoofnagle asked for an extension was to incorporate some of these comments in the official state position of the report upon receiving them.

Mr. Mike Schneider? We're not very formal you could have left that coat off, but I'll leave it up to you. I heard the air conditioner go off a few minutes ago, so I had to take off my jacket. I understand we're out of power here so -- I feel like the astronauts. Excuse me, Mr. Schneider.

MR. SCHNEIDER: Before I give my comments I would like to take up two items. One, I would imagine, in behalf of everyone here; I would like to request a copy the proceedings be made available here in this area. Preferably here at DER.

CHAIRMAN TRAINA: Yes, I don't know what Ms. Stokes' contract calls for but certainly we're going to ask her now if you would make a copy available of the transcript directly to Mr. Hoofnagle and his office in DER.

MR. SCHNEIDER: Thank you.

MR. HOOFNAGLE: I'm up in Suite 500, in this building.

CHAIRMAN TRAINA: What -- can we ask you, Ms. Stokes, when your transcript will be available?

COURT REPORTER: I think the order has requested ten day, working days.

CHAIRMAN TRAINA: Okay. So that will be available in ten days, both in DER office and EPA.

MR. SCHNEIDER: Thank you, sir. The second item would be that I would like to state at this time that Mr. Leseman's presentation is the City's official position on the subject that he spoke to.

CHAIRMAN TRAINA: Thank you, sir.

MR. SCHNEIDER: Monday in the Jacksonville paper, a rather large article came out:

> "City's Master Sewer Plan Mired In
> Inconsistency."

It goes into quite a bit of detail of the problems they've had there with package treatment plants and the problems there. Today when I got home I received another newspaper and the headlines here read:

> "Regional Wastewater System Replaces
> Sixty Substandard Plants."

Orange County in Orlando. I worked on a day to day basis with this Orlando project several years ago and it is mind-boggling to see that this has gone to the problem that it has.

Gentlemen, I'd like your estimate as to when in the Tallahassee Democrat, we'll see this same story about this area. Rather than stretch out this meeting, I'll give you a letter from the Mayor with staff's comments. There's also a letter form Mr. Jetter. Written comments point out numerous shortcomings of the EIS. Errors fall into categories such as; complete contradictions, technical inaccuracies, unfactual reporting of existing situations and unrealistic expecta tions of septic tank regulation beyond state standards. Much of this paper was put together hundreds of miles from here using questionable source material for the specific task. The source material appears to have been used without follow-up investigation to determine if the literature was applicable to the situation found here. T-9

Gentlemen, I thank you for your time and your attention.

CHAIRMAN TRAINA: Thank you very much, sir. We will incorporate that material you submitted to us for the record.

MR. SCHNEIDER: Thank you, sir.

CHAIRMAN TRAINA: Mr. Rhett White?

MR. WHITE: I'm here, I'm considering 'cause if I had some statements I think I'd do just as well to keep my poise and to keep my mouth shut.

CHAIRMAN TRAINA: Sir, again, this is your opportunity here so . . .

MR. WHITE: There are a lot of big guns and I don't have the material that Bill Leseman has and it's hard to decide whether you like ice cream or cake, you know, I -- there's so many, to be serious . . .

CHAIRMAN TRAINA: Mr. White, would you like to come up here and just ramble on for us. Seriously, we would like to hear from you, I think you, as I see it, you represent or you are with the County Health Department and certainly we'd like to hear the benefit -- get the benefit of your experience.

MR. WHITE: The thing is . . .

CHAIRMAN TRAINA: You see to be a very experienced individual, if I can't tell by the white hair.

MR. WHITE: Well my hair's gray for twenty-five years now.

CHAIRMAN TRAINA: Yeah, so is mine.

MR. WHITE: First, before anyone working with HRA says doodily, you should clear it with everyone, I mean, everyone except Mr. Reagan. And there are so many things going on in the state of Florida now and I am being quite serious that the problems that Florida faces. The Department of Environmental Regulation has had more than their share of problems with water quality. and the Department of Natural Resourse, at some times, thinks that we can get a lot of water from recharge if we can gather it from anywhere. The Florida Geology Department at FHU points out that we are taking more water out of the ground than we are putting in, consequently our water table is dropping rapidly. We're having salt water intrusion. It just so happens that personally I think the septic tanks could work if they were installed properly but we're still using 1930 criteria for 1980. We're using technology now that was developed in the forties, fifties and sixties and I simply can't keep up with the technology that's going on from day-to-day. The HRS has planned a complete revision of their septic tank chapter to cope with some of these problems. I have no idea to what portions the Legislature will look at these problems, what will come out of the mill. Leon County is very aware of these problems and they're aware of this EIS study. They're aware of their limited alternative. A lot of it, of course, is based on economics. They want to do something to up-grade the existing or impending problems that we would have, or the Regulations, so we don't have the problems. It would be very hard to say that the septic tank will work here or it won't work there or this is better for one or something is better for the other. You know, it's like a method of transportation, there are so many ways to get from point "a" to "b". I would be almost deciding which is better for the moment, maybe for the next tweny minutes "a" would be better but for later on "b", "c" or "d" would be equally better and things change so much it's -- the material coming out and technology is fantastic and I

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don't know. We're taking twenty-five million gallons of water here, perhaps from Leon County, it used to go down the river. Now at least part of it's going back into the ground. Is this going to be an asset or a liability in twenty years. The only thing I think that I could state and agree with Mr. Dykes, is that these small package treatment plants, in my fifteen years, have never worked satisfactorily. Tanks do or don't work depending on the conditions, criteria, but package plants have never been maintained; that I've seen anywhere in the state of Florida.

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Thank you.

CHAIRMAN TRAINA: Thank you very much, Mr. White, I appreciate you're coming up.

The next card's not indicated whether it's a yes or no wishing to speak, so let me call the name and ask the individual, Mr. George Hatt?

MR. CRUM: Flatt.

CHAIRMAN TRAINA: Flatt?

MR. FLATT: No, I have no comments.

CHAIRMAN TRAINA: No comments?

MR. FLATT: No.

CHAIRMAN TRAINA: Same with the Jessie Brown, it's not indicated . . .

MR. CRUM: Ms.

CHAIRMAN TRAINA: I'm sorry, excuse me, Miss Jessie

Brown, I'm -- I do know some male Jessie's and I'm certainly please to know a female Jessie.

MS. BROWN: Well I'd -- my name is Jessie Brown. I'm a citizen living near the sprayfield that has -- the proposed sprayfield that has Mr. Leseman so upset. I didn't plan to speak but since he was so intent that things didn't go his way in that area, I would like to say that I think the consultants didn't do the testing there because they felt that with as much open land as there is in Leon County there is no need in putting a sprayfield near indi -- human habitat, let's put it that way. You can test and test and test and perhaps you won't find the virus that time but there is a scientist in the Tampa area that did find it one day. We have seen these test results and I'm not convinced that ten years down the road that virus isn't going to appear in my well or my neighbor's well. I think the city was totally insensitive to propose putting a sprayfield within two hundred feet of a person's home and I'll believe it's safe when Mr. Leseman buys that man's home and proposes to live there himself with that sprayfield there.

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CHAIRMAN TRAINA: Thank you, Ms. Brown.

I have again, no indication whether you wish to speak or not, Glenn E. Carter.

MR. CARTER: No, I think it was all just said.

CHAIRMAN TRAINA: Thank you, Mr. Carter.

I'm not too sure which is the first name here, I believe it's Joe Koelemij. (Mispronunciation.) Koelemij, excuse me, sir. That's John Koelemij.

COURT REPORTER: Would you spell your name, sir?

MR. KOELEMIJ: Yes, ma'am. It's K-o-e-l-e-m-i-j, it's pronounced Coolemy, not Hotemy but coolemy. I almost was hot but the air conditioning went back on.

I'm a citizen of Leon County, I've been here for some twenty -- what -- seven years. I'm a homebuilder, I have developed land. I'm a member of the Citizen Advisory Committee that helped on this EIS program and I felt compelled when I got this report to really come and just make a few observations.

One is that in my estimation that the original question for -- of the purpose of the EIS has never been answered. The secondary impact and the region, you know, should we have a sewer system on the north side of town and a sprayfield down and so we approve part and now we're going to study the other part. And because there are some question that were raised by meetings that were held with people that objected to that plan at the time, that question has not been answered in this report. The basic question of the EIS, the question why it was all started and why we have paid, I don't know how much money and I think that the consulting firm and I -- I'm not an engineer, I'm just a homebuilder, but I've worked with engineers and I've worked with the architects. And -- but I think that the people that you employed to do this job have not done a good job. What I am very concerned about is this, that in my -- and I want to tell you this, that I, as I said to you before, I've been a homebuilder since 1954, I've been President of my local association twice and I've been President of the Florida Homebuider's Association, I was that in 1964 and I hope in January of this coming year to be elected as a national officer of NAHB. I've built in Jacksonville, in Broward County and in Tallahassee but mostly in Tallahassee, but I've lived through the nightmare of Duval County. And when I read alternative four, which is no action and, you know, we didn't ask for action in a sense. I think that when a proposal was submitted of the 201 Plan -- and the 201 plan is a Federal plan, and that normally ask for funding at whatever levels that the Federal Government might decide or the Congress might decide to have that particular year -- so it was studied and they say "no action", that's alternative number four. I think that's where they departed from what -- the question that was raised to begin with. Now the fact that we don't want federal money is very moot at the present time. The citizens, in November, decided that this Government is going to be less government and that's why they elected President Reagan and that's why we have the attitude that is prevailing in this country today. And many citizens will agree with you that that is better, maybe, for us but to say that because you have no federal action you should go do the wrong thing and to tell a community, like Tallahassee, that we should therefore go to septic tanks and to small sewage treatment plants, to me, I can't understand. I don't understand that an Engineering Firm, that you have hired, can make that recommendation. If I look at the experience a few years back, when I was President of the Florida Home Builders Association, we had a moratorium on the use of septic tanks in the state Florida, I mean, Mr. White probably remembers that, but we had an absolute moratorium; no more septic tanks because there was infiltration and there was all kind of problems with it. There was health problems with it. Later on when the Corp of Engineers made a study it was relieved, the Legislature, in it's infinite wisdom, made some more relief; which I think went maybe too far in giving relief to the use of septic tanks. Last year in -- a couple of months ago we adopted a comprehensive plan of the city and Leon County and the city of Tallahassee. And this comprehensive plan has very detailed prescriptions for us, as developers, to live by, and the community to live by; which is less urban sprawl, less roads, less sewer line, less water lines -- don't go out that far, have more density and green space inbetween and here we are saying we're going to build septic tanks. Septic tanks require a certain of area to build the

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T-14

tank and to have the drainfield to work it properly and if the soil is not sufficient or good in absorption then you've got to use more soil and more -- the lot has to be larger. So we create urban sprawl which is against the plan that we adopted as citizens of this county. But somebody from Philadelphia comes in and said that's how we're going to do it. Now, also it effects the water table, it effects the ground water table. The small sewage treatment plants -- when I was -- when we were building in Duval County they had small sewage treatment plants because the city was way behind. Tallahassee has been very progressive in it's building of sewer systems, builders, they had a tremendous program years ago by which builders and developers put up money with the city to in advance pay for trunk lines or pay for collection systems and they had a rebate system by which over the course of some twenty years we could get our money back, but in the mean time that system was in the ground, we had curb and gutters and we had a nice looking community; no open ditches. And I tell you this, I was proud of that when I came here and I've developed many subdivisions that -- where people are now living that we built that way. In Duval County it was different. You tied in to a little sewer plant and the developer had the sewer system and he's charged seven dollars a month and -- for the sewer treatment and two dollars. In the first place where the sewer plant was built it took a number of acres, the lots are rounded where not -- you could not get FHA or VA financing because of either the smell, the odor, or whatever it is, that you don't want to live next to a sewer plant. So there was an economic impact that was substantial and maybe poor people ultimately wound up living there, I don't know. But then when the city of Jacksonville decided to go into a tremendous revamping of their sewer systems, for which EPA paid and helped pay, and because they thought that was the answer, you see, they bought out all those little sewer treatment plants. You know how they bought them? They bought them on the basis of the rate of return and they paid fortunes for these sewer plants, to buy them out and to incorporate them into their system. I don't know that -- that the people that bought their home and paid for the installation of whatever system was put in place at that time, later on through taxes paid again for the city of Jacksonville to buy that system and to incorporate it into their large system. Of course, EPA paid part of that bill, but it's still the same tax payer that pays for it. That is why I don't understand how we really can forget all that and why an Engineering Firm can come up, looking at the experience and the practical experience that we have lived with in the state of Florida alone, to come up with this recommendation. And when it says here under number 4,

"That the expansion of the present

> wastewater system will continue only until the limits of phase I expansion are reached."

So then the city cannot do anymore except fill in.

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> "New growth in wastewater generations will be handled by on-site and small community systems."

Now that's the sentence that is damaging to the future of this community. You won't even let us do it on our own bill. If -- this report could be used by somebody who might be against the idea of a central system by saying EPA, which is kind of like God, the Federal Government said that the only way to do this and to live in the future is . . .

CHAIRMAN TRAINA: Mr. Koelemij, we've been called a lot of things . . .

MR. KOELEMIJ: I know that.

CHAIRMAN TRAINA: but I don't think anybody's called us God before.

MR. KOELEMIJ: No, but, you know, well some people believe in that and some people will use it and that is why I take issue with the meaning of this report, your statement, your EIS statement. It's like a Bible because some people will use it as such. And you say that the city should not expand. What if the city wants to do it on their own dollar and without the help of the Federal Government. I think you

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should -- you should not make such a statement that, you know, that could be very damaging to the future growth of this community; the healthy growth.

CHAIRMAN TRAINA: Mr. Koelemij, let me just comment there, as I heard Mr. Crum in his statement and certainly it's my position. Let me tell you, other than being a Hearing Officer, my real responsibility is that I do -- I am responsibility for the Grants program, the Wastewater Treatment Grants program in the region. But his statement stated that certainly EPA has no objection and could have no objection for the city proceeding whatever way it wants to go. This tentative decision this evening, the EIS, only addresses as to whether the federal government will contribute to that proposal.

MR. KOELEMIJ: Well, I would hope then, that his report, his final statement would make that differentiation and would make that notation because if we want to do it on our own we don't need the federal government. And I don't mean it that way because we do need each other, but, if at some point or other the federal government is of the mind that it will not spend the dollars, and, if other citizens want to spend the dollars without the overhead of the federal government, then you should allow us the opportunity to do that and not condem it, so to speak. And that is what this could be taken as, that it is a condemnation of that effort,

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if it were done by the city of Tallahassee or this community on it's own. And I really want to stress that point very heavily. I want to tell you furthermore, one thing and it is this, that -- and you probably have noted that I have a funny accent -- and I was born and raised in the Netherlands.

CHAIRMAN TRAINA: I thought you were raised in New York like I was, sir.

MR. KOELEMIJ: No, that's not right. No, I was born and raised in the Netherlands and when I listen to all the -- and I was back there for, you know, last month again for a visit with my family and when I -- I hear some of the complaints that are made about environmental things that happen and when I think back and read back and look again at the way they have protected themselves against, you know, the ocean where they have created the polders, where they have created new lands, where they planted new trees. You know, nothing is impossible for people to build an environment in which they can provide shelter and I am a person who is in the business of providing shelter. I have nothing to do with the growth of this country and the growth of this state but somehow or other we have to provide shelter for the people to live and we can make it so -- right now already because of interest rates, 90% of the people who want to buy shelter can't afford it. And if we are building roadblocks in the way to develop land on which we have to build shelter and in whatever manner the community lets us build it, we've got to watch that the cost does not exceed the ability of our children to afford to pay for it. And that is why I'm speaking and I think that's very important. It's important to me, today but it is much more important to my eleven year old who might want to become a builder, but I hope he doesn't. And with that, I really appreciate you're letting me speak.

Thank you very much.

CHAIRMAN TRAINA: Thank you very much, sir. And let me say for your benefit and for the others that the tentative action that we're considering tonight certainly -- and I can assure you, speaking on behalf of EPA -- does not preclude the city from proceeding in whatever course the city elects to proceed in. What we're tentatively proposing tonight or what has been proposed is that the Federal Government would not participate in that decision, financially. I want to make that very clear. And I think that based on frankly, your comments and comments we had received prior to this evening, that the Environmental Impact Statement would -- will clarify that point. And that is that the decision here tonight only addresses federal funding not any kind of direction or control from the federal government that the city of Tallahassee can or cannot do whatever it wants to do. That is certainly a decision the city of Tallahassee needs to make and frankly I would hope in conjunction with the other people who have raised objections to the earlier proposals and I would assume the city would take into account those concerns as it make it's decisions.

Mr. J. D. -- or I shouldn't say Mister -- J. D. Boone Kuersteiner? I guess it's safe to say it's Mr. now.

MR. KUERSTEINER: When I was working with the Department, I used to get a lot of the same names that you did but . . .

CHAIRMAN TRAINA: Were you ever called GOD?

MR. KUERSTEINER: No, there were other words that preceded and followed after that.

CHAIRMAN TRAINA: I didn't -- yeah, I was going to say there was usually a word after that that we've been called but never . . .

MR. KUERSTEINER: Mr. Hearing Officer, my name is Boone Kuersteiner, I'm an Attorney with the Law firm of Akerman, Senterfitt & Eidson. We have the pleasure of representing the Fall Chase Special Taxing District, which is a special service district located in the eastern portion of Leon County. We have some substantial portions of our client's property is located within the area identified and referenced in the Environmental Impact Statement as being the Lake Lafayette area. I have some specific comments that direct themselves to the Environmental Impact Statement. And the question that you might have is well why is this relevant at this point in time, you know, we're talking about federal funding and which direction should you go on federal funding but I think that based upon your personal experience and those of Mr. Crum and the members of this -- of the audience we know that, once these Environmental Impact Statements get published, they somehow start floating to the top and pretty soon they're floating around as part of the gospel. So, consequently we feel compelled to bring to your attention certain matter that are of a technical nature that have been an area of concern to us, as related to the draft, Environmental Impact Statement.

The first area of concern is that the maps in the document have failed to identify the Lake Lafayette area in it's correct posture. It's failed to recognize the four distinct hydrological basins that exist in the area referred to in the document as being the Lake Lafayette basin. T-18

Secondly, that as it relates to the inadequacies in the map, the map have taken the upper basin in it's entirety, and a total of four and seventy-three acres, and treated it in one big broad stroke as being a marsh when, in fact, the correct designation of the marsh areas as it relates to that specific area is more on the lines of 112 acres. So the map has four times embellished the actual size of the upper Lake Lafayette basin marsh areas. T-19

The third variable or the third concern, as it relates to the map designation, is that the maps that are used in the draft, Environmental Impact Statement are not consistent with the US Geological Quad sheets for the area and we would encourage the EPA to bring their maps into consistency with EPA. T-20

And we have a secondary of concern, that deals with the water quality data that was represented in the draft, Environmental Impact Statement, to have been performed as it relates to Lake Lafayette. The data that was collected fails to distinguish between the upper Lake Lafayette basins -- the basin and the other four -- other three basins in the Lake Lafayette area. It's the upper Lake Lafayette basin that is receiving a significant amounts of urban storm water run-off. And that's not adequately addressed in the draft, Environmental Impact Statement. T-21

A third area of concern is that the draft Environmental Impact Statement as it relates to the Lake Lafayette area seems to operate under the premise that the Lake Lafayette area has a flowing system moving from east to west and there's a linkage within that system. That's -- that is an incorrect assumption. T-22

Then on table number 4.6 there's a reference to protected plants and it's referenced to section one or section 581.185 of the Florida Statutes. That statute, we believe, has been incorrectly interpreted in the draft Environmental Impact Statement. What that statute does in Florida is that it protects horticultural interest and prohibits the harvesting of the species identified in the statute unless you have consent of the landowner. It's not a rare and endangered species list that is a prohibition against harvesting rather it is a permitting-type statute, requires permission of the landowner before you utilize it. The -- we would also -- we have a technical assessment's been prepared by one of the consultants for the district that we'd like to leave as an Exhibit. We also have a USGS Quad sheet that we'd like to introduce into the record as our second exhibit. The third exhibit would be a copy of section 158.185 for the statutes and the fourth exhibit we'd like to introduce is correspondence, it's referenced in the first exhibit. And that correspondence is correspondence from our office on behalf of our client to EPA dated July 9, 1980 concerning -- pardon me, that's July 9, 1981, excuse me, which has attached several technical reports that are site specific technical information relating to biological and geological features in the upper basin area and they address such things as the incorrect map designations in the EIS base maps, the improper treatment of the Lake Lafayette area as a single flow-through system. The attachments to that July 9th correspondence address the improper designation of the basin in terms of acreage unit. The scientific and technical errors and deficiencies that were incorporated or that were made in some of the study documents, and we don't know whether or not those

T-23

have been corrected or not. So for the purpose of the record
we'd like to make this July 9th correspondence part of the
record. And also there is an opinion, a 1979 opinion of the
Circuit Court in and for Leon County determining that the De-
partment of Environmental Regulations attempts at regulating
the upper Lake Lafayette basin as a Lake are inappropriate,
incorrect; that it cannot be regulated as a Lake and there-
fore be considered waters of the state. In terms of specific
recommendations that -- we would request that the United
States Environmental Protection Agency incorporate into the
EIS -- we would first ask that the maps be amended to proper-
ly designate the upper Lake Lafayette basin, in terms of by
name, by size and hydrological condition. And we'd also re- T-
quest that that designation be extended to the other three 24
units within the upper Lake Lafayette basin. Secondly, we
would urge and request that EPA use the USGS Quad sheets as
it's reference map, showing the four different basins in the T-
upper Lake Lafayette area based upon showing those basins be- 25
ing physically distinct and functionally unconnected. Third,
we would request that the draft EIS distinguish between the
four basins as it relates to water quality considerations. T-
The fourth area would be that the draft EIS statement be cor- 26
rected to eliminate the implications and inferences that the
Lake Lafayette system is a single flow-through system. And T-
fifth, we feel it'd be appropriate for EPA to correct the 27

misinterpretation of section 581.185 of Florida statutes.

And we'd like to, at this time, introduce for the record a series of Exhibits. The first Exhibit being a correspondence addressing the technical analysis of deficiencies in the draft EIS statement. The second being a set of USGS Quad sheets for the upper -- for the entire Lake Lafayette basin. The third, the correct -- the third is a reproduction of Section 158.14 -- or 185 for the statutes. And the last is the -- a composite Exhibit, the July 9, 1981 correspondence to the EIS Project Officer in Region IV as it relates to this draft Environmental Impact Statement with it's attachments, and we'd request that they be incorporated into the record at this time.

CHAIRMAN TRAINA: That request will be granted, sir.

MR. KUERSTEINER: One last procedural question. There was an extension of the time frame grant . . .

COURT REPORTER: Before you get into that, could I change my tape?

MR. KUERSTEINER: Oh, sure.

COURT REPORTER: Thank you.

(Brief pause while reporter changed tapes.)

COURT REPORTER: We're on, sir. Thank you.

MR. KUERSTEINER: Okay. A procedural question that we'd like some clarification from the Hearing Officer on is, there was an extension of the time granted to the Department of Environmental Regulation for submitted additional comments. Number one, will that extension apply to other parties interested in submitted comments and number two . . .

CHAIRMAN TRAINA: Yes, I don't know exactly what the Department wanted in terms of time but certainly that record will be open until such time as the department has submitted those comments.

Van, could you give us an estimate of how long a time you would need? We normally would keep this record open 'til November 20th.

MR. KUERSTIENER: Well lawyers love to procrastinate so we'd like to know what the deadline is so we can do it on the last day.

CHAIRMAN TRAINA: On the last day. Let me ask the state, could you give us an estimate of . . .

MR. HOOFNAGLE: We'd like between fifteen and thirty days beyond November 20th.

CHAIRMAN TRAINA: Okay. Fifteen days would be . . .

MR. KUERSTEINER: December 21 -- January 1 . . .

CHAIRMAN TRAINA: I tell you, one of the problems is that EPA, although it's considered God among some of you, it's considered as delay bureaucracy among most people and we get criticized quite a bit for delaying things. so we are under very tight schedules on these -- on these EIS's. Now, I would like to suggest Van, that we keep it open 'til about December 15th, is that too late, I mean, is that . . .

MR. HOOFNAGLE: That would be fine. I think after that time we'd be in Christmas anyway.

CHAIRMAN TRAINA: Yes. I'm concerned that if we get into Christmas why -- Can we make a decision on that?

MR. CRUM: I think so, I think so.

CHAIRMAN TRAINA: All right. Let me just officially say, if this is all right, sir, that we will keep the record open 'til December 15th.

MR. KUERSTEINER: Thank you very much.

CHAIRMAN TRAINA: Thank you, sir.

That concludes the individuals who, at least by card, have indicated a desire to make a statement here. Let me ask, at this time, is there anyone who I have not called who would care to make a statement?

Yes, sir? Mr. Schneider?

MR. SCHNEIDER: I'd like to ask one other question . . .

CHAIRMAN TRAINA: Yes, sir.

MR. SCHNEIDER: . . . based on your answers to a couple of the comments.

CHAIRMAN TRAINA: Would you like to get up here, sir; so the recorder could hear you?

MR. SCHNEIDER: I'd be interesting in knowing, from your comment, if you consider the EIS as a determination of eligibility of EPA funds only?

CHAIRMAN TRAINA: Oh yes, sir.

MR. SCHNEIDER: Thank you.

CHAIRMAN TRAINA: Are there any other comments, anyone who's previously made a comment who'd like to -- care to make another comment?

(No audible answer.)

CHAIRMAN TRAINA: Well, as I've indicated, the hearing will now remain open until December 15th. We would ask that all written comments you'd care to give us should be sent to Mr. John E. Hagen; Chief, EIS Branch; EPA Region IV; 345 Courtland Street; Atlanta, Georgia 30365. That address as noted is on the bottom of the agenda that you got at the front desk.

MEMBER OF AUDIENCE: The zip is different on that, 30365 . . .

CHAIRMAN TRAINA: Didn't I say 30365?

MR. HOOFNAGLE: Yeah.

(Member of audience.) I thought you said 61.

CHAIRMAN TRAINA: I guess it's my southern Georgia accent that throws you and I apologize for that even the Gentleman from the Netherlands understood me but -- you know, it's always a delight to come to Florida because it's Florida and seriously it's because the people show such an interest in the environment. I have to tell you that our region includes eight states in the southeast and sometimes we have hearings in which absolutely nobody comes. So, it's . . .

(Member of audience.) That ought to be a blessing.

CHAIRMAN TRAINA: No, not really 'cause it really doesn't make us feel that we're really getting a response to what we're doing or not doing. But I want to thank each and every one of you for coming out this evening, I'm sure that there were other things that you probably could have been gainfully doing tonight, but we want to thank you. We will consider the comments that were made this evening through the transcript. We will consider comments that are sent to us in writing. The final -- Let me just end on this, that the final EIS will consist of the Agency's final decision. A summary of the draft EIS, any pertinent additional information or evaluations developed since publication of the draft, revisions to the draft, comments received and EPA's responses to those comments in the transcript of this hearing will all be included. Those of you who commented tonight or submits comments will receive a comment of the EIS provided you fill out one of these little cards and give us an address.

Again, on behalf of EPA and the Florida Department of Environmental Regulation, we thank you for coming and this hearing is now adjourned.

(Whereupon, at 9:03 p.m., November 5, 1981 the hearing in the above-entitled matter was closed.)

CERTIFICATE

This is to certify that the attached transcript of the proceedings before the ENVIRONMENTAL PROTECTION AGENCY, WATER MANAGEMENT DIVISION, REGION IV, ATLANTA, GEORGIA

In the Matter of:

ENVIRONMENTAL IMPACT STATEMENT)
ON PROPOSED WASTEWATER MANAGE-)
MENT FOR THE CITY OF TALLAHAS-)
SEE, LEON COUNTY, FLORIDA)

Date: Thursday, November 5, 1981.

Place: DER Courtroom
Florida Department of Environmental Regulation
2600 Blaire Stone Road
Tallahassee, Florida 32301

were held as herein appears, and that this is the original transcript thereof for the files of the Board.

Mary Lou Stokes

MARY LOU STOKES, GCCR #B-361

RESPONSES TO ORAL COMMENTS

T-1. See the responses to comments W-26 and W-123 through W-127.

T-2. See the responses to comments W-26 and W-123 through W-127.

T-3. (1) The problem of operating and maintaining a large number of small community and individual on-site systems is recognized as a major limitation of Alternative 4. It is for this reason that the implementation of some form of management agency and a monitoring program is part of the recommended plan. These recommendations are discussed in Chapter III, Part C of the Draft EIS and in the responses to comments W-20 through W-25.

(2) See the response to comment W-116.

T-4. The response to comment W-80 contains a description of the methodology and sources used in the development of this map.

T-5. See the response to comment T-3 (1).

T-6. The implementation of a management agency to enforce proper siting and installation and the implementation of a groundwater monitoring program are recommended. Soil percolation rates in the Northeast, where most of the future growth is projected to occur, are not excessively high. This in itself may discourage the use of percolation ponds. Furthermore, the underlying geological formations, the Miccosukee and Hawthorne formations, provide additional protection to the Floridan aquifer. In southern Leon County, the use of perc ponds may cause problems because of rapidly permeable soils and the prevalence of sink holes. Little future growth is projected in this area, however, as much of it is generally undesirable for home construction as well.

T-7. With proper design, siting, installation, and operation and maintenance, on-site and small community systems will provide effective and environmentally sound treatment and disposal of wastewater. The term "No-Federal-Action" refers to action by the Federal government not the local government. A management agency is recommended to supervise the key factors noted above: design, siting, installation, operation, and maintenance. It is not a recommendation to do nothing and let nature take its course; rather it represents the decision by the EPA that, based on environmental and economic factors, the controlled use of on-site and small community systems in developing areas of Leon County is the most cost effective alternative.

T-8. Comment noted.

T-9. See the responses to comments W-15 through W-96.

T-10. Comment noted.

T-11. The management agency is proposed to provide the authority and personnel to enforce correct and regular maintenance for package plants.

T-12. Comment noted.

T-13. Comment noted. See the response to comment T-7.

T-14. See the response to comment W-79.

T-15. The intention of an EIS is to evaluate a proposed action for environmental soundness and cost effectiveness. That is, does the proposed action achieve the desired goal with the least amount of or the most acceptable environmental impacts? The purpose of this evaluation is to determine whether the Federal government will contribute to the proposed action.

In order to evaluate the proposed action, other alternatives are developed which represent other approaches to wastewater management. The alternatives can then be compared to one another. The selection of Alternative 4 by the EPA represents their decision that the controlled use of on-site and small community systems in developing areas of Leon County is the most cost-effective alternative, and that this is the only alternative that the Federal Government would commit funds to. It does not represent a directive to the City of Tallahassee and Leon County to proceed with this plan. The City and County may proceed with any plan they would like to, but Federal financial aid is only possible if Alternative 4 is implemented.

T-16. See the response to comment T-15.

T-17. See the response to comment T-15.

T-18. An addition to the DEIS will be noted in Chapter IV of the FEIS, "Revisions to the Draft EIS and Additional Information." This addition will consist of a statement that Lake Lafayette can be regarded as four separate sections, as a result of man-made restrictions, and a reference to a document by the Trustees of the Internal Improvement Trust Fund, FDNR, that Mr. Kuersteiner has provided.

T-19. Comment noted. The delineation and definition of Lake Lafayette, although a point of argument within the community, is not an issue in this EIS. The sources of all base maps used in the DEIS and FEIS have been noted. Most maps of the area show Lake Lafayette differently from each other as well as from the USGS quad sheets for the area. All of the maps in the DEIS were adjusted to reflect the delineation of Lake Lafayette on the USGS quad sheets. Because of differences in scale and the origins of the various maps used in the EIS, the level of detail of the USGS quad sheets could not be maintained. These maps have been approved by the EPA as acceptable for the purposes of the EIS. A statement will be added to the DEIS which refers the reader to the USGS quad sheets for the detailed delineation of Lake Lafayette. This addition will be noted in Chapter IV of the FEIS, "Revisions to the Draft EIS and Additional Information."

T-20. Comment noted. See the response to comment T-19.

T-21. The purpose of the Draft EIS is to summarize the work completed in the previous tasks and to present the selected alternative with its costs, environmental impacts, and recommendations for implementation and mitigation of adverse impacts. For the discussion requested by Mr. Kuersteiner, we refer him to the Environmental Monitoring Program, Segment I Draft Report of this EIS. On page 51 of this document the results of water quality sampling of Lake Lafayette are discussed:

> "The water quality results indicate that the Lake Lafayette system has a much higher water quality than the Lake Munson system. The Lake Lafayette "system" is bissected by the impoundment of Piney Z Lake, forming upper (sites 7 and 8) and lower (sites 9 and 10) Lake Lafayette. While dissolved oxygen level violations were recorded for the system, most other parameters indicated relatively high water quality. Notable exceptions pertain to the Weems Pond Site (7). This site is grossly impacted by urban runoff while D.O. violations at other sites appear to be due to plant respiration, the violations at Weems Pond are caused by the digestion of settled solids. In addition, the only phosphate problems noted for the system were from Weems Pond. This is also most likely associated with urban runoff. While the area of upper Lake Lafayette near Falls Chase currently has high water quality, changes in land runoff and the destruction of sedimentation ponds or wetlands could increase the loading to the upper lake system."

T-22. Mr. Kuersteiner has not specifically identified a statement or section of the DEIS where Lake Lafayette has been identified as a flowing system moving from east to west. The area known as Lake Lafayette is hydrologically complex, consisting of marshes, streams, a major sinkhole, and several man-made restrictions such as the dikes which create the Piney Z Lake and the railroad embankment. No attempt has been made in this EIS to quantify the hydrology of Lake Lafayette as it is not relevant to the purpose of the study.

T-23. Section 581.185 of the Florida Statutes is an act relating to the "Preservation of native flora of Florida." As such it establishes requirements to obtain a permit or written permission from the land owner to harvest certain flora from public or private lands; specifically the Act states, "The purpose of the permitting requirements imposed under paragraph (a) is to encourage the propagation of endangered or depleted species of flora and provide an orderly and controlled procedure for restricting harvesting of native flora from the wilds, thus preventing wanton exploitation or destruction of Florida native plant populations." For this purpose the Act provides a list of endangered and threatened plants. It also creates the Endangered Plant Advisory Council which is responsible for periodically reviewing and updating the list.

The list provided by Section 581.85 was used to identify flora protected by Florida law from the species of plants identified in field investigations of potential sprayfield sites. The consultant believes the Act was utilized appropriately.

T-24. See the response to comment T-19.

T-25. See the response to comment T-19.

T-26. See the response to comment T-21.

T-27. See the response to comment T-22.

VI. COORDINATION WITH FEDERAL, STATE, REGIONAL AND LOCAL AGENCIES

Federal Government Contacts

Contact	Purpose
Federal Emergency Management Agency Region IV, Atlanta, GA	Obtain National Flood Insurance Program Rate Maps
U.S. Fish and Wildlife Service Asheville, NC	Obtain protected species information
U.S. Forest Service Tallahassee, FL	Obtain vegetation information about Appalachicola National Forest

State and Government Contacts

Contact	Purpose
Florida Dept. of State, Division of Archives, History & Record Management	Obtain archeological and historic survey results
Florida Game and Freshwater Fish Dept.	Obtain fisheries information
Florida Dept. of Environmental Regulation	Obtain water quality information

Regional and Local Contacts

Contact	Purpose
Tallahassee-Leon County Planning Department	Obtain land use, population, socio-economic data. Obtain 208 Plan information
Leon County Department of Public Works	Obtain local floodplain management information
Tallahassee Office of Management and Budget	Obtain capital budgets

Tallahassee Historic Preservation Board	Obtain historic preservation information
Post, Buckley, Schuh & Jernigan, Inc.	Obtain 208 Plan background information
Environmental Science & Engineering, Inc.	Obtain 208 Plan background information
Wm. M. Bishop Engineers, Inc.	Obtain 201 Plan background information
Tall Timbers Research Station	Obtain terrestrial ecosystem information
Tallahassee Water Quality Laboratory	Obtain water quality sampling results

VII. LIST OF PREPARERS

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